

START

0029945-79



Department of Energy

Richland Field Office

P.O. Box 550

Richland, Washington 99352

JUN 30 1993

Incoming 9302984

93-RPS-241

Mr. George C. Hofer
Hanford Project Manager
U.S. Environmental Protection Agency
Region 10
1200 Sixth Avenue
Seattle, Washington 98101

Ms. Dru Butler, Program Manager
Nuclear and Mixed Waste Management
State of Washington
Department of Ecology
P.O. Box 47600
Olympia, Washington 98504-7600

Dear Mr. Hofer and Ms. Butler:

SUBMITTAL OF THE 200 WEST AREA ASH PIT DEMOLITION SITE (T-2-2) AND THE 218 E-8 BORROW PIT DEMOLITION SITE (T-2-1) CLOSURE PLANS NOTICE OF DEFICIENCY RESPONSE TABLES

The Notice of Deficiency (NOD) Response Tables for the 200 West Area Ash Pit Demolition Site and 218 E-8 Borrow Pit Demolition Site Closure Plans are submitted by the U.S. Department of Energy, Richland Operations Office (RL) and the Westinghouse Hanford Company (WHC) for approval by the State of Washington Department of Ecology (Ecology). Submittal of these response tables fulfills the June 30, 1993, commitment date. The NOD response tables are in reply to Ecology's comments dated February 26, 1993.

Copies of each NOD response table will be distributed to representatives of your respective organizations as follows:

- D. Duncan, U.S. Environmental Protection Agency (2 copies)
- C. Ruud, Ecology, Kennewick Office (4 copies 218 E-8)
- J. Wallace, Ecology, Kennewick Office (4 copies Ash Pit)
- T. Michelena, Ecology, Lacey Office (1 copy)
- Ecology Library, Lacey Office (1 copy)



9313021.0744

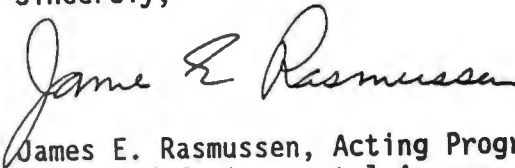
Mr. Hofer and Ms. Butler
93-RPS-241

-2-

JUN 30 1993 Incoming 9302984

Should you have any questions regarding this transmittal, please contact Mr. R. N. Krekel, RL, on (509) 376-4264 or Mr. F. A. Ruck III, WHC, on (509) 376-9876.

Sincerely,



James E. Rasmussen, Acting Program Manager
Office of Environmental Assurance,
Permits, and Policy
DOE Richland Operations Office

EAP:RNK



R. E. Lerch, Deputy Director
Restoration and Remediation
Westinghouse Hanford Company

Enclosures:

- 1) 200 West Area Ash Pit
NOD Response Table
- 2) 218 E-8 Borrow Pit
NOD Response Table

cc w/encls:

Administrative Records, H6-08
D. Duncan, EPA
T. Michelena, Ecology
C. Ruud, Ecology
J. Wallace, Ecology

cc w/o encls:

B. Austin, WHC
D. Nylander, Ecology
S. Price, WHC
F. Ruck, WHC
D. Sherwood, EPA

9313021.0745

218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLEJune 25, 1993
Page 1 of 38

No.	Comments/Response	<u>Concurrence</u>
1.	<p>Deficiency. The level of detail of several chapters in this closure plan is inadequate.</p> <p>Requirement. The closure plan must contain enough detail to allow the evaluation of whether:</p> <ul style="list-style-type: none">a. the activities described in the plan satisfy the regulations, orb. the conditions assumed in the plan adequately reflect actual conditions of the unit. <p>RL/WHC Response: Comment is too general to address. The level of detail in this closure plan is similar to the level provided in other closure plans which are nearing final approval by Ecology.</p>	
2.	<p>Deficiency. Throughout the closure plan there are references to using only a mobile laboratory for sampling and analysis. It is not stated that this is an EPA accredited laboratory or if any secondary or follow up analysis will be conducted at an accredited laboratory.</p> <p>The mobile laboratory is good for initial site characterization to determine where contamination is located but it can not meet SW-846 requirements.</p> <p>The impact on the closure schedule if the mobile laboratory is not available or acceptable is not addressed.</p> <p>Requirement. Correct the deficiencies of the text.</p> <p>RL/WHC Response: Accepted. Revised text will propose to perform initial (investigative) sampling with analytical support to be provided</p>	

218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLEJune 25, 1993
Page 2 of 38

No.	Comments/Response	<u>Concurrence</u>
	<p>by the onsite Environmental Analytical Laboratory (EAL), previously referred to as the "mobile laboratory." The EAL will be providing analytical level II support, as opposed to Level III capabilities that were planned for the laboratory at the time Revision 0 of the closure plan was prepared. Tables 7-1, 7-2, 7A-1 and 7A-2 identify analytes of interest for initial sampling.</p> <p>A separate round of confirmatory sampling will be proposed in Revision 1 of the plan. Confirmatory samples will be analyzed by an offsite, Ecology-approved analytical level III laboratory. Subsequent to initial sampling and analysis and discussion of the results with Ecology, separate data quality objectives and analyte tables for confirmatory sampling will be prepared and documented as addenda to the closure plan.</p> <p>Likewise, if soil removal is undertaken and verification sampling is to be carried out in support of soil removal, samples would be analyzed by an offsite analytical Level III laboratory. Separate data quality objectives and analyte tables would be developed for incorporation as addenda to the plan in that event.</p> <p>If the EAL is not available to support sampling at the 200-W Ash Pit site, then sample analysis would have to be performed by an offsite contractor laboratory. The following schedule forecast would apply in the event:</p> <ul style="list-style-type: none">- Sampling: 1 week (no change)- Offsite analysis: 12 weeks (9 weeks longer than shown for EAL)- Data Evaluation: 12 weeks (no change) <p>Offsite analysis would add 9 weeks to the initial (investigation) phase of soil sampling. Because the EAL is now offering Analytical Level II</p>	

**218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 3 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>services, rather than Level III, an additional round of confirmatory sampling will be required. The breakdown for offsite analysis (listed above) will increase the schedule in Figure 7-2 by 25 weeks.</p>	
3.	<p>Comment. The closure plan also cites many internal Westinghouse procedural manuals. It is not clear if these documents fulfill the EPA/Ecology requirements.</p> <p>RL/WHC Response: Copies of requested WHC Control Manuals cited in the closure plan were furnished to an Ecology, Kennewick Unit Manager representative.</p>	
4.	<p>1-1, 11 Deficiency. The text states that, "this event was a form of thermal treatment for <u>spent</u> or <u>abandoned</u> chemical waste." This is inconsistent with the waste description provided in chapter 3, Process Information. Chapter 3.0 describes the waste as excess or beyond shelf life. If this is the case, then the materials are not spent waste. The contradiction must be corrected because it affects the waste designation.</p> <p>Requirement. Clarify the specific source or process which generated the waste and the form (product versus spent/used material) in which it was disposed. Consult WAC-173-303 for designation guidance.</p> <p>RL/WHC Response: The chemicals detonated at the 218 E-8 site were not spent or abandoned. The text will be revised to state "the chemicals were determined to be in excess or beyond designated stock life," to be consistent with the description in Chapter 3, pg 3-1.</p>	
5.	<p>1-1, 20 Deficiency. The plan does not present adequate information to determine if the waste has been properly designated. Information regarding the source of the waste (i.e., process derived from) and a distinction between wastes disposed in commercial form and those which were spent</p>	

218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLEJune 25, 1993
Page 4 of 38

No.	Comments/Response	<u>Concurrence</u>
	<p>material is necessary to make such a determination.</p> <p>Requirement. See previous comment and WAC 173-303-070 for guidance.</p> <p>RL/WHC Response: See comment 4. Waste characterization per WAC 173-303 is summarized in Table T4-1. The waste codes in Table T4-1 also indicate that the chemicals were not spent.</p>	
6.	<p data-bbox="331 686 426 711">2-2, 1</p> <p data-bbox="474 667 1575 740">Deficiency. The description of the demolition site does not provide adequate detail to allow potential exposure pathways to be evaluated.</p> <p data-bbox="474 760 1608 959">Requirement. Provide description of depth to water table, soil characteristics, and any containment used during the detonation. Because this was a one-time event which does not appear to have been contained, it will be required that Hanford meteorological information, for the time of the event, be incorporated into the closure plan. Weather conditions may have influenced the dispersion of contaminants.</p> <p data-bbox="474 979 1612 1084">RL/WHC Response: The detonation took place at approximately 10:00 p.m. Weather conditions were approximately 45°F, winds less than 15 mph, and overcast.</p> <p data-bbox="474 1109 1617 1214">The surface soils were dry when the detonations were performed at this site. All chemicals detonated were contained in their original, closed containers until released by explosive forces.</p> <p data-bbox="474 1239 1297 1279">Depth from soil surface to groundwater is 305 feet.</p> <p data-bbox="474 1304 1486 1344">The text will be revised to reflect the proceeding information.</p>	

**218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 5 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
7.	<p>2-2, 11 Deficiency. The description of the borrow pit as being essentially void of vegetation is not consistent with the photograph provided in Appendix 3A. In the photograph, several species of grasses and bushes are apparent.</p> <p>Requirement. Correct inconsistency.</p> <p>RL/WHC Response: Accepted. (Text will be revised.)</p>	
8.	<p>2-2, 22 Deficiency. It is not clear how the exact location of the demolition site was determined in 1988, four years after the event. There is no discussion of markers, maps, or surveys used to initially define the demolition site.</p> <p>Requirement. Explain how the location was determined.</p> <p>RL/WHC Response: At the time the fence was placed at the demolition site, there was still a depression in the soil from the blasting pit (Text will be revised to reflect this additional information).</p>	
9.	<p>2-2, 30 Note. This section of the closure plan, Security Information, may require revision due to the recent and upcoming security down grades on the Hanford Site.</p> <p>RL/WHC Response: Accepted. Text will be revised to reflect any new security changes to the Hanford Site.</p>	
10.	<p>3-1, 1 Deficiency. A major deficiency of the plan is information on the actual demolition event. The process information does not provide a description of the event or associated actions. For example, was any post-treatment analysis conducted to verify treatment, or physical interaction with the site such as racking, shoveling, or watering down?</p>	

218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLEJune 25, 1993
Page 6 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>Was waste containerized or free in pit during detonation? How were waste containers managed during and after the event? What color, how high, how wide was the explosion? Was material seen or heard hitting the ground?</p> <p>Requirement. Provide a detailed narrative of the event and associated actions. Address the following questions:</p> <ul style="list-style-type: none">a. Was the waste co-mingled and poured directly on the ground?b. How were waste containers managed during and after the event?c. What were the environmental conditions at the time?d. How, or was, waste inventory verified?e. What post-treatment activities were conducted? <p>RL/WHC Response:</p> <ul style="list-style-type: none">a. No container contents were poured onto the ground prior to detonation. The chemicals were detonated in their containers because opening the cap of the container could have initiated an explosion.b. Prior to detonation, the containers were placed in a small pit on top of several sticks of nitroglycerin dynamite, wrapped in detonating cord (on a separated blasting cap), surrounded with a blasting agent. The charges were configured in a manner that channeled the explosive force downward. <p>There was no evidence of remaining explosives, containers or parts of containers after the detonations. The area was inspected the following morning (in daylight) to confirm that no chemicals or containers remained.</p> <ul style="list-style-type: none">c. Refer to WHC response to NOD No. 6.	

218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE

June 25, 1993
Page 7 of 38

No.	Comments/Response	<u>Concurrence</u>
	<p>d. There are discrepancies on the inventory currently listed on Table T4-1. The correct inventory for the 218 E-8 site is:</p> <p>2.75 kg. of 1-4 dioxane 16.7 kg. of 2-butoxyethanol 7.92 kg. of Isopropyl ether .319 kg. of MEK peroxide</p> <p>A checklist of the chemical inventory was prepared prior to beginning detonation activities. The potentially explosive chemicals were checked off the list as they were placed into a portable bomb containment vessel, for transportation to the demolition site. Information from the checklist was used to prepare the Dangerous Waste Annual Report.</p> <p>e. Post treatment activities included a walk down to ensure that no explosives, chemicals, or containers remained after the shot.</p> <p>The text will be revised to reflect the preceding information.</p>	
11.	<p>3-1, 8 Deficiency. First, the description of the "general" waste characteristic as being shock-sensitive or reactive is not appropriate. The major component of the waste (87%) was Phosphoric Acid, which is designated a corrosive and is neither shock-sensitive nor combustible.</p> <p>Second, this section of the plan describes the wastes as "excess or beyond designated stock life." Page 1-1, line 11 states that "this event was a form of thermal treatment for <u>spent</u> or <u>abandoned</u> chemical waste."</p> <p>Requirement. Correct or clarify the characteristic misrepresentation and specify if, or which, wastes were discarded chemical products. The process which generated the waste and the form (product versus spent/used material) in which it is disposed influences its designation.</p>	

**218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 8 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	Consult WAC-173-303 for designation guidance. See comment 4.	
	RL/WHC Response: See comment No. 34 and No. 4.	
12.	<p>3-1, 11 Deficiency. It is said that the wastes were contained, but no container description is provided.</p> <p>Requirement. Provide a detailed description of the number, material, volume of container(s), and a description of the container management practices. Were the containers, or pieces of containers, removed from the site? If so, how were they managed? State exactly how the wastes were placed in the pit.</p> <p>RL/WHC Response: See comment No. 10.</p>	
13.	<p>3-1, 13 Deficiency. Detonation materials are not included in the scope of sampling and analysis. Because these materials were derived from the treatment of dangerous waste and now are potentially mixed with dangerous wastes, they are now dangerous waste.</p> <p>Requirement. The explosives used to initiate the detonation (and any regulated products potentially generated from the detonation) must be incorporated into the sampling and analysis plan. Revise text accordingly.</p> <p>RL/WHC Response: The chemicals used to initiate the detonation will be listed in a separate table in Chapter 4. The sampling plan will be modified to reflect the additional analytes.</p>	
14.	<p>4-1 Deficiency. This chapter provides some valuable information, but overall it is inadequate.</p>	

**218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 9 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>Suggestion. Incorporate a column specifying the waste source (i.e., spent or in commercial form), the physical state, and action levels into Table 4-1 or generate a similar table.</p> <p>RL/WHC Response: Health-based cleanup thresholds will be provided in the next revision of this closure plan, for those constitutes for which appropriate toxicity information is available.</p>	
15.	<p>T4-1</p> <p>Deficiency. The function of the site is described as being for the detonation of shock-sensitive chemical waste. Comparing the relative quantities and characteristics of the wastes treated at the site indicates that Phosphoric Acid, a corrosive, comprised 87% of the total quantity of the waste treated at the unit. Phosphoric Acid is a liquid (unless in pure form) which is not shock-sensitive or combustible. Because of the characteristics of the acid, it would have been dispersed during the detonation event without altering its hazardous characteristics.</p> <p>Requirement. Sampling and analysis for this substance and its products is excluded from the closure plan.</p> <p>RL/WHC Response: See comment No. 34.</p>	
16.	<p>Deficiency. It is not apparent how the dangerous waste codes presented in Table T4-1 were determined or if they are correct. Several of the sources of information are not appropriate for the purpose of designating waste.</p> <p>Requirement. Waste must be designated in accordance with WAC 173-303-070, Designation of Dangerous Waste, using current information sources.</p>	

218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE

June 25, 1993
Page 10 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>RL/WHC Response: The chemicals were treated in their original containers and assumed to be either outdated or not needed. These chemicals were recently redesignated according to current WAC 173-303 regulations. Any assumptions concerning waste sources were conservative (i.e., in instances where the applicability of a code was uncertain, it was assumed to be applicable). Waste characteristics were derived from known physical properties and toxicity information available for the waste constituents.</p>	
17.	<p>Deficiency. The detonation material is potentially regulated dangerous waste.</p> <p>Requirement. Designate the material and products, and integrate into the cleanup process if determined to be hazardous waste.</p> <p>RL/WHC Response: See comment No. 13.</p>	
18.	<p>Deficiency. Dangerous waste number U098 (1, 1-Dimethylhydrazine) is in the Part A, but is not included in Table 4-1. This waste has both ignitable and carcinogenic properties according to the National Institute of Occupational Safety and Health, Registry of Toxic Effects of Chemical Substances.</p> <p>Requirement. Modify text and table to correct contradictions and correct deficiencies.</p> <p>RL/WHC Response: 1,1-Dimethylhydrazine was never detonated at the 218 E-8 Site. Operator verification of the inventory that post dates submission of the Part A inventory has resulted in revision of the closure plan. See comment response 10d. for the precise inventory.</p> <p>Deficiency. Sodium Azide is included in Table 4-1, but is not presented</p>	

**218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 11 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>in the Part A. This is an Extremely Hazardous Waste with a Dangerous Waste number of P105, if disposed of in commercial form. The waste codes in Table 4-1 appear to contradict the representation of the wastes as outdated or excess chemicals. If this waste had been managed as an excess commercial product, it would carry the code P105.</p> <p>Requirement. Modify text and table to correct contradictions and correct deficiencies.</p> <p>RL/WHC Response: See Comment No. 42.</p> <p>Deficiency. An asterisk is present on the "D" symbol in the key list following Table 4-1, typically indicating a reference to a clarifying statement, but no footnote or explanation is provided.</p> <p>Requirement. Modify text and table to correct contradictions and correct deficiencies.</p> <p>RL/WHC Response: Asterisk will be removed from Table 4-1.</p>	
19.	<p>5-1 Deficiency. The text states that the Tri-Party Agreement (TPA) authorizes ground water to be remediated under CERCLA without intermittent RCRA monitoring.</p> <p>Requirement. This is not correct. RCRA monitoring is required. The monitoring can be coordinated with CERCLA monitoring. See comment regarding number 76.</p> <p>RL/WHC Response: The text will be revised as follows: "The 218 E-8 Demolition site is not subject to the groundwater monitoring requirements of WAC 173-303-610 (7)(a) if there is not waste left in place, as is consistent with the preferred closure strategy</p>	

**218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 12 of 38

No.	Comments/Response	<u>Concurrence</u>
20.	<p data-bbox="478 412 1629 574">(Chapter 6.0). The 218 E-8 Demolition site will not be operated, as a dangerous waste surface impoundment, waste pile, land treatment unit, or landfill as defined in WAC 173-303-645(1)(a). Therefore, if clean or protective closure can be attained, groundwater monitoring is not required."</p> <p data-bbox="333 607 1566 802">6-1, 19 Deficiency. Table 7-1 referenced here is said to take into account waste inventory, reaction products, and chemical degradation. The following sentence states that only analytes listed in Table 7-1 are traceable to 218-E-8 Demolition Site. Table 7-1 does not list all wastes detonated at the site or potentially regulated reaction or degradation products.</p> <p data-bbox="478 826 1598 956">Requirement. The closure plan must account for all dangerous wastes associated with the detonation site. This includes dangerous wastes generated from the treatment of the original wastes and materials used to treat the waste (i.e., the detonation materials).</p> <p data-bbox="478 980 1629 1175">RL/WHC Response: Text on Page 6-1, Lines 19-23 will be modified to read as follows: "The basis for determining chemical ownership is the list of analytes of interest found in Chapter 7.0, Table 7-1, <u>as qualified by the discussion in Section 7.2.2.</u> Only <u>those</u> analytes <u>identified in Section 7.2.2 and/or Table 7-1</u> are traceable to the Ash Pit Demolition Site activities."</p> <p data-bbox="478 1208 1629 1305">Table 7-1, as qualified by the discussion in Section 7.2.2, accounts for all dangerous wastes associated with the detonation site. Regarding the detonation materials, refer to NOD # 17 comment response.</p>	
21.	<p data-bbox="333 1370 1629 1432">6-1, 23 Note. It is stated, "if at any time an imminent hazard is posed at the 218-E-8 Demolition Site, an expedited response will result to ensure</p>	

218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE

June 25, 1993
Page 13 of 38

No.	Comments/Response	<u>Concurrence</u>
	<p>worker safety."</p> <p>Requirement. Closure of the site must be conducted in a manner consistent with the closure plan. Deviation from the closure plan must be approved by Ecology.</p> <p>RL/WHC Response: The word "expedited" will be replaced with the word "emergency" in order to clarify the sentence.</p>	
22.	<p>6-1, 31 Deficiency. The plan states that background will be Site-wide background threshold values as defined in the Hanford Site Soil Background (DOE/RL 1992a). At present, this study is not complete and Ecology has not yet received final data packages for constituents of concern.</p> <p>Requirement. Ecology must review and approve the Hanford Site Soil Background (DOE/RL 1992a) before the values can be implemented for closure.</p> <p>RL/WHC Response: Ecology has reviewed and approved <u>the Hanford Site Soil Background Study</u> (DOE/RL 1992a).</p>	
23.	<p>6-1, 34 Deficiency. The plan states that if concentrations exceed initial action levels, health-based action levels will be assessed. This is not consistent with clean closure standards. It is expected that during the next revision of the Dangerous Waste Regulations, WAC 173-303, that the Model Toxics Control Act (MTCA) will be incorporated into the closure requirements. To date no guidance or policy has been issued allowing this approach to be implemented during present closure activities.</p> <p>Requirement. If the concentration of waste at the site are below (or reduced to) background levels for listed or characteristic wastes, or to</p>	

218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE

June 25, 1993
Page 14 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>the designation limit for state-only waste managed at the site, clean closure will be achieved. If the site is closed with waste left in place post-closure requirements will be imposed.</p> <p>RL/WHC Response: In anticipating the incorporation of cleanup levels rather than environmental background levels, into the Washington State Department Waste regulations, RL contend it is appropriate to use health-based action levels.</p>	
24.	<p>6-1, 37 Deficiency. This paragraph discusses the proposed method to determine cleanup levels. It is said that the health-based levels will be based on equations and exposure assumptions presented in the Hanford Site Baseline Risk Assessment Methodology (DOE/RL 1992B). This is not appropriate.</p> <p>Requirement. Health-based levels, if permitted for closure, are determined from MTCA. See two previous comments.</p> <p>RL/WHC Response: RL has attempted to establish a uniform health-based cleanup standard for a range of land-use eventualities (Hanford Site Baseline Risk Assessment Methodology [HSBRAM]; referenced in the closure plan). Preparation of this standard is sanctioned by the Tri-Party Agreement process (Milestone number M-29-03). It is intended to provide a risk assessment methodology that is consistent with current regulations and guidance. The method was developed specifically to evaluated risk for CERCLA remedial investigations and RCRA facility investigations. The health-based method of HSBRAM is similar to, and consistent with the Model Toxics Control Act (MTCA [WAC 173-340]). HSBRAM has been accepted by the EPA and Ecology generally at the Hanford Site, and is consistent with the consensus of TPA project manager meetings and Ecology's standards will replace background in WAC 173-303. HSBRAM is proposed in the 218 E-8 Demolition closure plan.</p>	

**218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 15 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
25.	<p>6-1, 47 Deficiency. The plan states that health-based levels will be based on values that are current at the time of approval of this closure plan.</p> <p>Requirement. Ecology must approve all health-based levels implemented for closure.</p> <p>RL/WHC Response: Please see page 6-1, line 44-47. The term "values" in this sentence is referring to the oral reference dose and slope factors obtained for the Integrated Risk Information System (IRIS) (EPA 1991) database, these values may change as IRIS is updated.</p>	
26.	<p>6-1, 50 Deficiency. This paragraph discusses remedial activities and coordination with CERCLA remediation if it is determined that the action levels are exceeded.</p> <p>Requirement. CERCLA coordination is acceptable if the time frame and other factors of remediation can be integrated with the RCRA closure. But the comprehensive RCRA closure will not be deferred to, or preempted by CERCLA remediation. If clean closure is not achieved, post-closure requirements will be imposed, including requirements to assure residual contamination will be addressed during CERCLA remediation.</p> <p>RL/WHC Response: Coordination is planned if clean closure is not achieved. RL would keep Ecology informed on this integration process whenever it occurred. Please clarify the statement that closure cannot be deferred until CERCLA remediation.</p>	
27.	<p>6-2, 36 Deficiency. The plan states that "actions will be/or have been taken". It is not clear which actions were conducted prior to preparation and approval of the closure plan.</p> <p>Requirement. Actions previously conducted must be distinguished in</p>	

**218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 16 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>order to evaluate the adequacy.</p> <p>RL/WHC Response: Any action that has been already completed will be noted in the text.</p>	
28.	<p>6-2, 43 Deficiency. This bullet states that the Hanford Site Baseline Risk Assessment Methodology implements WAC 173-304 (MTCA).</p> <p>Requirement. See comment 24.</p> <p>RL/WHC Response: See comment responses Nos. 22 and 24.</p>	
29.	<p>6-3, 20 Deficiency. The plan states that the samples will be analyzed by an on-site mobile laboratory capable of performing to EPA Analytical level III standards.</p> <p>Requirement. See comment 2.</p> <p>RL/WHC Response: See comment response No. 2.</p>	
30.	<p>6-3, 34 Deficiency. The plan states that contamination at the 218-E-8 Demolition site is above the action level in the near-surface soils. The term near-surface is not defined or rationalized. It has not been justified why only near-surface sampling and analysis will be limited only to surface contamination.</p> <p>Requirement. Removal of deeper contamination may be coordinated with CERCLA remediation, but investigation and planning can not be deferred. A plan will have to be developed and integrated into the closure plan.</p> <p>RL/WHC Response: See comment response No. 44.</p>	

218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE

June 25, 1993
Page 17 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
31.	<p>7-1, 20 Requirement. "Substantially free" needs to be quantitatively defined.</p> <p>RL/WHC Response: "Substantially free..." is defined in brackets on lines 21-24. As this information clearly indicates, the context is administrative, not quantitative.</p>	
32.	<p>7-1, 31 Requirement. Explain analytical level III services as it applies to this closure. Specify if the mobile laboratory meets level III requirements.</p> <p>RL/WHC Response: See comment response No. 2.</p>	
33.	<p>7-1, 33 Deficiency. The text states that portable field screening instruments will provide adequate information for devising and implementing appropriate remedial action.</p> <p>Requirement. Specify if further sampling will be conducted if constituents are found at significant concentrations.</p> <p>RL/WHC Response: Text is misquoted. Text reads "... the data obtained from soil sampling and analysis (possibly supplemented by data obtained with portable field screening instrumentation) will provide adequate information for devising and implementing appropriate remedial action."</p> <p>Confirmatory sampling (i.e., more elaborate sampling) is proposed to support a regulatory determination of clean closure. There is no technical need or justification for conducting "more elaborate sampling and analysis" to support a remedial action.</p>	
34.	<p>7-1, 42 Deficiency. The closure plan states that it is necessary to have a general understanding of explosives and detonations in order to create a suitable soil sampling and analysis scheme. This is misleading because</p>	

218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE

June 25, 1993
Page 18 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>the major component of the waste detonated was a corrosive, Phosphoric Acid, which is non-combustible and non-explosive. When the detonation event occurred, this waste was probably dispersed over a larger area.</p> <p>Requirement. Provide a discussion of the characteristics, impact of thermal treatment and final disposition of the Phosphoric Acid, in addition to the discussion presented.</p> <p>RL/WHC Response: Thermal treatment of phosphoric acid did not occur at the 218 E-8 site. Treatment of phosphoric acid at the 218 E-8 site was identified in Rev. 0 of the closure plan based on erroneous reporting in the WHC Environmental Protection Surveillance and Compliance Inspection Reports. As indicated by WHC personnel in the Unit Managers' Meetings (UMM) of April 15, 1993 and May 12, 1993, the inventory is being amended; phosphoric acid will be deleted.</p>	
35.	<p>7-2, 28 Note. This paragraph discusses the possibility for the generation of by-products from the detonation event.</p> <p>Requirement. Incorporate regulated products into the analyte list.</p> <p>RL/WHC Response: See comment response No. 20.</p>	
36.	<p>7-2, 35 Note. This paragraph discusses the potential dispersion of waste from the detonation event. This factor will influence the final definition of the boundary.</p> <p>Requirement. Modify text to reflect this consideration.</p> <p>RL/WHC Response: See comment response No. 44.</p>	
37.	<p>7-2, 49 Deficiency. This section refers to the waste inventory list which is</p>	

**218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 19 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>inadequate.</p> <p>Requirement. It must account for all dangerous wastes detonated or generated from the detonation at the site.</p> <p>RL/WHC Response: See comment response No. 17.</p>	
38.	<p>7-3, 11 Note. It is stated that the concentrations of any dangerous waste constituents that may remain in the soil after closure would probably exist in very low concentrations.</p> <p>Requirement. Specify whether the mobile laboratory will or will not be able to detect such concentrations.</p> <p>RL/WHC Response: Taken out of context, terms such as "low" or "very low" do not have quantitative significance. The intent of the cited statement in context, as indicated in the sentence that follows in the text, is to justify a conservative approach to initial sampling and analysis (as opposed to, for example, doing level I field screening initially). Method detection limits are identified on pages 7-8 and 7-9.</p>	
39.	<p>7-3, 18 Deficiency. Portable field screening instruments are considered level I, not level I or II.</p> <p>Requirement. Modify text to reflect this consideration.</p> <p>RL/WHC Response: Accepted. See comment response No. 2.</p>	
40.	<p>7-3, 43 Deficiency. It is not specified how it was determined that this was the only compound from the Toxic Characteristics List.</p>	

218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLEJune 25, 1993
Page 20 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>Requirement. Provide a thorough discussion of this determination.</p> <p>RL/WHC Response: Text makes no reference to the Toxic Characteristics List. Rather, the text refers to EPA's Target Compound List (TCL). The TCL was created by EPA for use in the Contract Laboratory Program (CLP). The TCL was formerly referred to as the Hazardous Substance List. The list contains organic compounds that are quantitated during Superfund site remediations. Currently, many gas chromatograph/mass spectrometers are internally calibrated for these compounds. It was determined that methyl ethyl ketone is the only TCL compound present by comparing the items in Table 7-1 against the items include on the TCL.</p>	
41.	<p>7-4, 1 Deficiency. There is concern for on-site calibration of instruments. Is it conceivable that the instruments may be less sensitive because of local contamination?</p> <p>Requirement. Provide a discussion to demonstrate that this concern has/or will be addressed.</p> <p>RL/WHC Response: The citation discusses preparation or acquisition of solutions that would be used as calibration standards (i.e., for equipment such as gas chromatograph, and GC/MS devices). These types of devices are virtually always calibrated on site, because most of them are fixed equipment. Calibration will be managed and controlled per EAL technical and operating procedures. All proposed EAL analytical procedures, will be submitted to Ecology for review and approval in advance of sampling. These types of devices are virtually always calibrated in place, insofar as they generally are fixed equipment.</p>	
42.	<p>7-4, 18 Deficiency. The exclusion of Sodium Azide and the Nitrate ion from the target analyte list is not appropriate.</p>	

218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLEJune 25, 1993
Page 21 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>Requirement. Revise the sampling and analysis plan to reflect WAC 173-303 regulation of these substances. Sodium Azide and the Nitrate ion, which is not environmentally benign at certain concentrations, and any regulated decomposition products shall be incorporated into the sampling and analysis plan.</p> <p>Note. Due to the potential for implementing MTCA standards in the future, it may be advisable to address MTCA standards for these substances.</p> <p>RL/WHC Response: Thermal treatment of sodium azide at the 218 E-8 site was erroneously reported in WHC Environmental Protection Surveillance and Compliance Inspection Reports. As indicated by WHC personnel at the UMMs of April 15, 1993 and May 12, 1993, the inventory is being amended: sodium azide will be deleted. After proposed modifications, the waste inventory no longer shows that any nitrogen-containing compounds were treated at the 218 E-8 site. Consequently, RL and WHC do not propose to analyze samples for nitrate ions.</p>	
43.	<p>7-4, 28 Deficiency. Phosphoric Acid consisted of 87% of the total quantity of wastes detonated at the site (Table 4-1). Because the acid is neither combustible nor shock-sensitive, it was probably dispersed rather than treated by the detonation.</p> <p>Requirement. The acid and any regulated decomposition products shall be incorporated into the sampling and analysis plan.</p> <p>Note. Consult the Dangerous Waste regulations (WAC 173-303) for proper waste designation procedures and (the Model Toxic Control Act, WAC 173-340, for potential) cleanup standards.</p> <p>RL/WHC Response: See comment response No. 34.</p>	

218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE

June 25, 1993
Page 22 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
44.	<p>7-4, 38 Requirement. The sampling design must be evaluated by a statistician prior to conducting any work to determine if the sampling and analyses are adequate to determine extent of contamination.</p> <p>Add a provision for bias sampling in areas of visual contamination, down wind areas, and deeper in pit areas, in addition to random sampling.</p> <p>RL/WHC Response: Current commitments call for RL and WHC to sample and analyze the near-surface soils using the EAL for analytical support. The EAL (analytical Level II) generally provides method detection limit capabilities in the low PPM range, which should compare favorably with proposed action limits for the analytes of interest.</p> <p>If the initial round of sampling should indicate that any of the analytes of interest in Table 7-1 are present at concentrations exceeding proposed action levels, then supplemental sampling will be undertaken. A new sampling arrangement would be developed for supplemental sampling, working outward from the "hot spot" locations identified previously. The supplemental sampling plan would be reviewed in advance with Ecology. Field screening methods may be applied for supplementary sampling. If RL and WHC should propose field screening methods (analytical Level I) supplemental sampling, demonstrations would be provided that the screening method(s) of choice offer adequate sensitivity to detect the analyte(s) of interest at concentrations that are statistically significantly lower than corresponding action level(s). If it is determined that field screening methods are not applicable, sampling and analysis would be carried out by the same methods proposed for initial sampling (i.e., analytical Level II).</p> <p>Supplemental sampling of the near-surface soils (i.e., the uppermost 2 ft interval) would be extended outward from "hot spots" until the extent of contaminated soil is completely defined, irrespective of the</p>	

218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE

June 25, 1993
Page 23 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>initial sampling arrangement. The volume of contaminated soil (i.e., soil with contaminant concentrations exceeding negotiated action levels) would be removed in 2-ft thick layer, as discussed in Section 7.3. Afterwards, the newly exposed ground surface would be resampled for verification purposes (analytical level III). The verification sampling plan would be reviewed in advance with Ecology. If the newly exposed soil also is contaminated, the lateral extent of contamination would be determined by sampling as above, and additional soil would be removed in 2-ft lifts as necessary. This process of sampling and soil removal would be repeated as often as necessary to achieve the objective of clean closure. A final round of confirmatory sampling (analytical level III) is proposed to support a regulatory determination of clean closure. As in other cases, the confirmatory sampling plan would be reviewed in advance with Ecology.</p> <p>RL and WHC believe that contamination at the demolition sites (if present) is shallow and of limited lateral extent. The proposed plan seeks to limit the amount of sampling and associated expense in the event that this view is correct. RL and WHC are aware that the approach involves some risk-taking and cost consequences in the event that contamination is extensive and a relatively elaborate cleanup effort is required. The closure plan includes contingencies (outlined above) for working outward and downward in the soil column if contamination is discovered. RL and WHC believe that plan offers sufficient contingencies to ensure that the plan will be responsive to Ecology's regulatory interests in any event regarding the specific nature and extent of contamination at the site.</p> <p>Regarding <u>statistical evaluation of the plan</u>: The draft plan was reviewed by a qualified statistician.</p> <p>Regarding <u>areas of visual contamination</u>: There are no visibly</p>	

218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLEJune 25, 1993
Page 24 of 38

No.	Comments/Response	<u>Concurrence</u>
	<p>contaminated areas. As discussed in Section 3.0, the sites were inspected immediately after demolition events, and any visibly contaminated areas were cleaned up.</p> <p>Regarding <u>biased sampling in the down-wind direction</u>: Work rules in place at the time prohibited conducting demolition activities when wind speeds exceeded 35 mph (i.e., it is generally known that none of the demolition events occurred at the times when winds exceeded 35 mph). Participants at the demolition events believe that wind condition never actually exceeded 10-15 mph, although written records of weather condition were not kept. RL and WHC believes that contingencies in the existing plan are sufficient to identify distortions in contaminant distribution due to wind dispersal without modifications to the proposed arrangement for initial sampling.</p> <p>Regarding Ecology's expressed interest in extending <u>sampling deeper in pit areas</u>: It is unlikely that contaminants were driven into the ground by the demolition activities. It is far likelier that chemical reaction products and any unreacted residues were released into the air (the unconfined direction in terms of the forces and pressure involved). Because contamination (if any) would have been a surface condition initially, the existence of sub-surface contamination (if any) would have been brought about by factors such as solution and leaching. RL and WHC believes that contingencies in the existing plan are sufficient to identify residual sub-surface contamination. If the uppermost 2 ft of the soil column is shown not to contain contaminant concentrations at or near to action levels, then RL and WHC do not agree there is a legitimate concern that higher concentration of contaminants traceable to the subject activities could exist at greater depths. It is not a reasonable expectation that contaminants could somehow be driven 12 ft into the ground as the result of the activities described in the closure plan.</p>	

218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE

June 25, 1993
Page 25 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>Extensive research has been conducted at the Hanford Site regarding moisture evapotranspiration of soil moisture and infiltration (recharge) through the vadose zone. It has generally been determined, with some exceptions for isolated locations where the near-surface soils are extremely coarse, that wetting fronts generally do not penetrate to depths exceeding about 4 feet. Sampling to a depth of 12 feet would require working with either a hollow-stem auger rig or a backhoe. Either option represents a major departure (in terms of time and cost) from the proposed plan. To attempt to resolve this issue, RL and WHC would propose to sample to a depth of 4 feet at the open circled locations shown in Figures 7-1 in the plan. RL and WHC also would be willing to offer to resample at extended depths at any location where initial sampling results indicate that contaminants are present at or close to proposed action levels.</p>	
45.	<p>7-4, 48 Deficiency. Due to the heterogenous nature of the waste detonated at the site, and the fact that materials may have been driven to considerable depths from the explosion, contaminants are not likely to be evenly distributed. One surface sample from the approximate center is not adequate.</p> <p>Requirement. Sampling will have to be conducted not only at the surface, but also at substantial depth under the site. Refer to previous comment.</p> <p>Note. The small amount of samples proposed in this section does not appear to warrant the use of a mobile laboratory.</p> <p>RL/WHC Response: See comment response No. 44.</p>	
46.	<p>7-5, 5 Deficiency. It is stated that surface sampling will be conducted at two locations. This is inadequate.</p>	

**218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 26 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>Requirement. At each sampling location, sampling and analysis for organics should be conducted at a minimum for both the top layer and the next underlying layer.</p> <p>RL/WHC Response: As indicated in Lines 30-33 of the same page, the purpose of the two surface samples is to evaluate the adequacy of the proposed arrangement. If residual contaminants are not identifiable in the two surface (0-6 in.) samples to be taken as identified on line 5, then RL and WHC does not propose to sample and analyze this interval at the other locations. The two locations were selected to be near the geometric center of the site where the highest concentrations of residual contamination (if any) would be expected to be occur.</p>	
47.	<p>7-5, 19 Deficiency. The text states that the soil sampling will occur to a depth of 18 inches below grade at six inch intervals.</p> <p>Requirement. In addition at each sampling location, sampling and analysis for organics will be conducted for both the top layer and the next underlying layer.</p> <p>RL/WHC Response: The text does not indicate that samples will be taken at 6-in. intervals. Text specifies that one sample will be taken from the 6-18 in. interval. Sampling will be carried out in conformance with EII 5.2 (as indicated on line 24). All previous RCRA sampling at Hanford has been performed per this procedure since the procedure was promulgated in 1989. Ecology has regularly approved plans that specify sampling per this procedure. There are no provisions in EII 5.2 for management of soil that is removed prior to sampling. The soil would not be removed beyond the immediate vicinity of the sample location.</p>	
48.	<p>7-5, 38 Note. One kilogram equals 2.2 pounds, not 2 pounds. Also, pounds is a unit of weight not volume.</p>	

**218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 27 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	RL/WHC Response: Accepted.	
49.	<p>7-5, 49 Deficiency. Quantitation limits implemented as action levels must be justified.</p> <p>Suggestion. Modify Table 4-1 to incorporate columns specifying the action level associated with potential contaminants and the basis for such levels. For example, are specific action levels established from background measurements, detection limits, etc.</p> <p>RL/WHC Response: The citation does not state that quantitation limits would be implemented as action levels. RL and WHC does not propose quantitation limits as action levels in any case. Action levels will be prepared for inclusion in Section 6.0 of Revision 1. Proposed action levels will be health based values.</p>	
50.	<p>7-6, 3 Deficiency. Action levels must be determined prior to sampling and analysis. The text should mention when action levels will be proposed and contaminant levels will be compared against proposed action levels. More information is needed on the site background threshold values. At present, the Hanford Soil Background Study is going on, and as far as we know, we have yet to receive the final values for various organics and inorganics of concern.</p> <p>Requirement. Modify the text to correct deficiencies. See comment 22.</p> <p>RL/WHC Response: Regarding action levels, refer to NOD No. 49 comment response. Regarding the Hanford Site-wide soil background study, refer to NOD No. 22 comment response.</p>	
51.	<p>7-6, 11 Deficiency. Preparatory procedures lack detail and sample preparation is neglected.</p>	

218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE

June 25, 1993
Page 28 of 38

No.	Comments/Response	<u>Concurrence</u>
	<p>Requirement. Modify the text accordingly.</p> <p>RL/WHC Response: All proposed EAL analytical methods, including information on sample preparation, will be submitted to Ecology for review and approval in advance of sampling. The requested information is not available at this time.</p>	
52.	<p>7-6, 35 Deficiency. Supercritical fluid extraction (SFE) is not appropriate because it has yet to be approved for use.</p> <p>Requirement. Revise text to reflect the use of approved methods of sampling and analysis.</p> <p>RL/WHC Response: Ecology's concern is noted. All proposed EAL analytical methods, including SFE, will be submitted to Ecology for review and approval in advance of sampling.</p>	
53.	<p>7-6, 38 Deficiency. X-ray fluorescence is not an approved method for metals characterization. It is only to be used as an in-field method to determine sampling locations or areas of contamination.</p> <p>Requirement. Revise text to reflect the use of approved methods of sampling and analysis.</p> <p>RL/WHC Response: Ecology's concern is noted. All proposed EAL analytical methods, including XRF, will be submitted to Ecology for review and approval in advance of sampling. Additionally, the text of Revision 1 will describe the EAL as an analytical Level II laboratory (see NOD No. 2 comment response), and will propose XRF as an analytical Level II application.</p>	
54.	<p>7-6, 45 Deficiency. The discussion of the configuration of series does not</p>	

218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE

June 25, 1993
Page 29 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>address potential impacts on analytical results (i.e., burn off organics before analyzing for them) from variations in the configuration.</p> <p>Requirements. Address the influence of the configuration of the series on the analytical results.</p> <p>RL/WHC Response: Accepted. "...in series." should read"...in parallel."</p>	
55.	<p>7-6, 47 Detection limits for Volatile Organics in ground water is 10 micrograms per liter according to SW-846.</p> <p>Requirement. Address why the detection limit presented here is significantly higher.</p> <p>RL/WHC Response: Detection limit in text of 100 micrograms per kilograms is for soil. Method detection limits for water and soil are not interchangeable.</p>	
56.	<p>7-6, 50 Deficiency. Procedures for calibration of analytical equipment is said to be based on mobile lab and published EPA procedures. The concern is that combining the procedures could allow for manipulation of performance and not be consistent with EPA requirements.</p> <p>Requirement. Provide supporting evidence that these procedures will be consistent with EPA requirements.</p> <p>RL/WHC Response: Ecology's concern is noted. All proposed EAL analytical methods, will be submitted to Ecology for review and approval in advance of sampling.</p>	
57.	<p>7-7, 26 Deficiency. Using unapproved methods may lead to unacceptable data.</p>	

218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE

June 25, 1993
Page 30 of 38

No.	Comments/Response	<u>Concurrence</u>
	Suggestion. Do not rely solely on this procedure. See comment 52.	
	RL/WHC Response: Ecology's concern is noted. All proposed EAL analytical methods, including SFE, will be submitted to Ecology for review and approval in advance of sampling.	
58.	<p>7-7, 34 Deficiency. X-ray fluorescence is not an approved method for metals characterization. It is only to be used as an in-field method to determine sampling locations or areas of contamination.</p> <p>Also the atomic number of Sodium is 11 and Phosphorous is 15. If the detection limit is atomic number 11, that is too close to target values and may introduce significant error in the analytical data.</p> <p>Requirement. Revise text to reflect the use of approved methods of sampling and analysis. Consider contaminants when selecting analytical methods.</p> <p>RL/WHC Response: Phosphorus is not a proposed analyte of interest in Table 7-1. Otherwise, Ecology's concern is noted in general. All proposed EAL analytical methods, including XRF, will be submitted to Ecology for review and approval in advance of sampling. Additionally, the text of Revision 1 will describe the EAL as an analytical Level II laboratory (see NOD No. 2 comment response), and will propose XRF as an analytical Level II application.</p>	
59.	<p>7-7, 39 Deficiency. Detection limits for target RCRA metals are set to 20 micrograms per gram. Do these detection limits meet the Dangerous Waste requirements of background levels for characteristic and listed wastes and designation limits for state only wastes?</p> <p>Requirement. Compare the detection limits with the WAC 173-303</p>	

**218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 31 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>regulatory levels.</p> <p>RL/WHC Response: Citation is to a paragraph that provides general information on the XRF method. This NOD comment is moot because there are no metal analytes of interest for the 218 E-8 Site and no XRF analyses are proposed (see Table 7-1).</p>	
60.	7-7, 44 Deficiency/Requirement. See previous comment.	
	<p>RL/WHC Response: Citation is to a paragraph that provides general information on the IC analyses. This NOD comment is moot because there are no ion analytes of interest for the 218 E-8 Site and no IC analyses are proposed (see Table 7-1).</p>	
61.	7-8, 16 Deficiency. The on-site mobile laboratory's capabilities are not equivalent to analytical level III. Verification analysis must be performed by EPA level III criteria (SW-846), which can only be performed by an EPA certified laboratory. The mobile lab provides only level II analyses.	
	<p>Requirement. Unless certified, the mobile lab should only be used to aid in determining sampling locations and plume mapping during remediation.</p> <p>RL/WHC Response: Accepted. See comment response No. 2.</p>	
62.	7-8, 52 Requirement. On-site mobile laboratory calibration procedures must be fully compliant with EPA requirements.	
	<p>RL/WHC Response: Accepted. See comment response No. 2.</p>	
63.	7-9, 10 Deficiency. Calibration of instruments only once a day, or shift, may	

218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE

June 25, 1993
Page 32 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>introduce significant error. Calibration may be affected by varying environmental conditions throughout the day, such as a change in temperature or humidity.</p> <p>Requirement. Calibration schedules must respond to ambient environmental fluctuations.</p> <p>RL/WHC Response: The intent of RL and WHC on the issue of calibration is to conform to the statements appearing on page 7-8, lines 50, and Section 7A-6 of the QAPjP. The sentence on page 7-9, lines 10-12 will be eliminated from Revision 1 to avoid any potential conflict or the appearance of conflict between these statements.</p>	
64.	<p>7-10, 33 Requirement. All clean closure sample data should be compiled in Contract Laboratory Procedure (CLP) format. Consult SW-846, chapter 1, for guidance on the forms which Ecology will accept.</p> <p>RL/WHC Response: The text already cites SW-846, Chapter 1 for guidance on documentation (see Lines 45-46). CLP format is not a requirement of WAC 173-303.</p>	
65.	<p>7-11, 32 Deficiency. WAC 173-303-610 is not included in the citations consulted for the development of soil cleanup action levels.</p> <p>Requirement. To be considered clean closure, soil contamination must be less than or equal to background or designation limits for state only wastes. If soil contamination concentrations are greater than those stated, they would be considered a modified landfill closure. This would require compliance with reduced landfill requirements. Also, see comment 23.</p>	

**218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 33 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	RL/WHC Response: See comment response Nos. 23 and 24.	
66.	<p>7-12, 12 Deficiency. The determination of sampling locations by using random algorithm for initial characterization as specified in section 7.2.3 is acceptable. But the location of sampling points for calculation of the volume of contaminated soil demands a systematic protocol. Sampling plans with well defined grid spacing, locations, etc. might vary depending on the results obtained in the initial characterization.</p> <p>Requirement. The sampling plan will require approval prior to implementation.</p> <p>RL/WHC Response: Accepted.</p>	
67.	<p>7-12, 31 Deficiency. The proposed two foot vertical depth for sampling is inadequate.</p> <p>Requirement. Significantly increase the proposed sampling depth. Consider twelve foot depth.</p> <p>RL/WHC Response: See comment response No. 44.</p>	
68.	<p>7-13, 12 Note. The application of water during removal to control dust needs careful examination and will depend on the contaminant of concern. There is a good chance that contaminants can migrate with water downward during the process. This is especially so since excavation is limited. Other dust control devices may have to be applied depending on the nature of the contaminants.</p> <p>RL/WHC Response: Accepted. (No change to text at this time.)</p>	
69.	7-14, 15 Deficiency. Regulatory requirements require that verification sample	

**218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 34 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	analysis be done at level III or IV. A mobile laboratory does not qualify.	
	Requirement. Verification analyses must be done by EPA approved methodology, some of which can only be done in a stationary laboratory.	
	RL/WHC Response: Accepted. See comment response No. 2.	
70.	7-15, 14 Deficiency. A closure plan can be amended prior to final closure, but only with approval from the lead regulatory agency, which is Ecology in this case. This requirement was ambiguously presented in the closure plan.	
	RL/WHC Response: See page 7-15, line 17-20 for clarification.	
71.	F7-1 Requirement. Provide a direction arrow.	
	RL/WHC Response: Accepted.	
72.	F7-1 Requirement. Show the location of the detonation pit.	
	RL/WHC Response: Presently, there is no physically identifiable detonation pit at the site. However, the depression was still evident at the time the fenced boundary was established. Figure F7-1 represents precise coordinates of surveyed monuments that were placed approximately 10 feet out from the present 20 by 20 foot fence boundary. The reason the site was surveyed and the monuments located 10 feet outside the fence boundary was to ensure a wide, complete and surveyed sampling area. The 20 by 20 foot fence site boundary can be approximated and overlain on top of this figure.	
73.	F7-1 Deficiency. Sampling locations do not cover downwind areas.	

**218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 35 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>Requirement. Sampling must be done to characterize all potentially contaminated areas.</p> <p>RL/WHC Response: See comment response No. 44.</p>	
74.	<p>F7-1 Deficiency. Surface layer sampling in the middle of the site (probably the pit) is not appropriate. The contamination of wastes in the center of the site is suspected to be the greatest and deepest.</p> <p>Requirement. Modify sampling plan and figure to address deficiency.</p> <p>RL/WHC Response: See comment response No. 44.</p>	
75.	<p>T7-1 Deficiency. This table is inadequate.</p> <p>Requirement. Regulated decomposition and reaction products must be included in the list of target analytes. Appropriate methodologies, action levels, and detection limits need to be listed. Also list method modifications and metal analysis.</p> <p>RL/WHC Response: Regarding <u>decomposition and reaction products</u>: Recognized decomposition and reaction products are identified and discussed on page 7-4. Recognized products that may be constituents of potential regulatory concern are listed in the table. (Also refer to NOD No. 17 comment response.)</p> <p>Regarding <u>methodologies and method modifications</u>: Methodologies for initial sampling and analysis in the EAL are identified in the table to the extent that RL and WHC are able to do so at this time (in advance of issuance of EAL procedure manuals). Formal EAL analytical procedures are in preparation. Copies of all EAL analytical procedures will be submitted to Ecology for review and approval in advance of sampling.</p>	

218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE

June 25, 1993
Page 36 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>Anticipated relationships between EAL procedures and published EPA methods (and other methods) are discussed in Section 7.2.4.</p> <p>Regarding <u>action levels</u>: A table listing proposed action levels for the analytes of interest identified in Table 7-1 will be prepared for inclusion in Section 6.0 of Revision 1.</p> <p>Regarding <u>detection limits</u>: Practical quantitation limits (PQLs) are listed in Table 7A-1 of the QAPJP. The same analytes are listed in Tables 7-1 and 7A-1. An explanatory note will be attached to Table 7-1 indicating where the PQL information is provided.</p> <p>Regarding <u>metal analytes</u>: No metal analytes are proposed.</p>	
76.	<p>8-2, 15 Deficiency. This is not an adequate explanation of potential integration of RCRA with CERCLA.</p> <p>Requirement. If such an approach is to be considered, a much more complete discussion must be provided. Yearly inspection of the site until CERCLA remediation is not adequate. Methods to integrate sampling and analysis requirements, minimize the migration of wastes, and security of the site until remediation would have to be developed.</p> <p>RL/WHC Response: Yearly inspection is a minimal base line. Actual inspection intervals will not be determined until after sample results are received and evaluated. If it is determined that post-closure is necessary than a detailed and specific plan will be developed.</p>	
77.	<p>Appendix Comment. A general comment about the appendix is that it appears lacking.</p> <p>Suggestion. Information about process knowledge, spill/occurrence</p>	

**218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 37 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>reports, and the detonation event (i.e., a description of the actual event and environmental conditions) would be helpful.</p> <p>RL/WHC Response: The requested information has not been provided in any previous QAPJP prepared by RL and WHC. Process knowledge information has already been provided in Chapter 3 of the closure plan. There were no spill/occurrence to report and the detonation event is described in other locations in the closure plan.</p>	
78.	<p>7A-1, 26 Deficiency. Surface sampling is specified as the objective of the investigation. This is not appropriate.</p> <p>Requirement. The objective of the investigation is to determine the extent of contamination at the site. Revise the text accordingly.</p> <p>RL/WHC Response: Accepted. Lines 25-27 will be revised to read: "The principal objective of initial (investigative) sampling will be to identify the presence and extent of dangerous waste constituents in surface soils at the site relative to levels of potential regulatory concern."</p>	
79.	<p>7A-1, 42 Requirement. If remediation is required, confirmatory samples are required and must be done in an EPA approved laboratory at level III analysis, not a mobile laboratory.</p> <p>RL/WHC Response: Accepted. See comment response No. 2.</p>	
80.	<p>7A-2, 1 Suggestion. EPA-QZMS-005/80, "Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans," should also be referenced.</p> <p>RL/WHC Response: Accepted.</p>	

218-E-8 PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLEJune 25, 1993
Page 38 of 38

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
81.	<p>7A-10 Deficiency. The reference provided for validation procedures, "Data Validation Procedures for Chemical Analysis (WHC-SD-EN-SPP-002)," is a validation procedure for Contract Laboratory Program (CLP) sample data, not analyses performed under SW-846. The correct reference should be: Sample Management and Administration (WHC-CM-5-3)."</p> <p>Requirement. Revise the text to correct the error.</p> <p>RL/WHC Response: Accepted.</p>	

200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE

June 25, 1993
Page 1 of 37

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
1.	<p>Deficiency. The level of detail of several chapters in this closure plan is inadequate.</p> <p>Requirement. The closure plan must contain enough detail to allow the evaluation of whether:</p> <ul style="list-style-type: none">a. the activities described in the plan satisfy the regulations, orb. the conditions assumed in the plan adequately reflect actual conditions of the unit. <p>RL/WHC Response: Comment is too general to address. The level of detail in this closure plan is similar to the level provided in other closure plans which are nearing final approval by Ecology.</p>	
2.	<p>Deficiency. Throughout the closure plan there are references to using only a mobile laboratory for sampling and analysis. It is not stated that this is an EPA accredited laboratory or if any secondary or follow-up analysis will be conducted at an accredited laboratory.</p> <p>The mobile laboratory is good for initial site characterization to determine where contamination is located, but it can not meet SW-846 requirements.</p> <p>There is no discussion of the impact on the closure schedule if the mobile laboratory is not be acceptable or available for the closure.</p> <p>Requirement. Correct the deficiencies of the text.</p> <p>RL/WHC Response: Accepted. Revised text will propose to perform initial (investigative) sampling with analytical support to be provided</p>	

200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLEJune 25, 1993
Page 2 of 37

No.	Comments/Response	<u>Concurrence</u>
	<p>by the on-site Environmental Analytical Laboratory (EAL), previously referred to as the "mobile laboratory". The EAL will be providing analytical Level II support, as opposed to level III capabilities that were planned for the laboratory at the time Revision 0 of the closure plan was prepared. Tables 7-1, 7-2, 7A-1 and 7A-2 identify analytes of interest for initial sampling.</p> <p>A separate round of confirmatory sampling will be proposed in Revision 1 of the plan. Confirmatory samples will be analyzed by an off-site, Ecology-approved analytical Level III laboratory. Subsequent to initial sampling and analysis and discussion of the results with Ecology, separate data quality objectives and analyte tables for confirmatory sampling will be prepared and documented as addenda to the closure plan.</p> <p>Likewise, if soil removal is undertaken and verification sampling is to be carried out in support of soil removal, samples would be analyzed by an off-site analytical Level III laboratory. Separate data quality objectives and analyte tables would be developed for incorporation as addenda to the plan in that event.</p> <p>If the EAL is not available to support sampling at the 200-W Ash Pit site, then sample analysis would have to be performed by an off-site contractor laboratory. The following schedule forecast would apply in the event:</p> <ul style="list-style-type: none">- Sampling: 1 week (no change)- Off-site analysis: 12 weeks (9 weeks longer than shown for EAL)- Data Evaluation: 12 weeks (no change) <p>Off-site analysis would add 9 weeks to the initial (investigation) phase of soil sampling. Because the EAL is now offering Analytical Level II</p>	

200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE

June 25, 1993
Page 3 of 37

No.	Comments/Response	<u>Concurrence</u>
	services, rather than Level III, an additional round of confirmatory sampling will be required. The breakdown for off-site analysis (listed above) will increase the schedule in Figure 7-2 by 25 weeks.	
3.	<p>Comment. The closure plan also cites many internal Westinghouse procedural manuals. It is not clear if these documents fulfill the EPA/Ecology requirement</p> <p>RL/WHC Response: Copies of requested WHC Control Manuals cited in the closure plan were furnished to an Ecology, Kennewick Unit Manager representative.</p>	
4.	<p>1-1, 13 Deficiency. States that, "this event was a form of thermal treatment for <u>spent</u> or <u>abandoned</u> chemical waste." This is inconsistent with the waste description provided in Chapter 3, Process Information. Chapter 3.0 describes the waste as excess or beyond shelf life. If this is the case, then the materials are not spent waste. The contradiction must be corrected because it affects the waste designation.</p> <p>Requirement. Specify the source or process which generated the waste and the form (product versus spent/used material) in which it was disposed. Consult the Dangerous Waste Regulations, Washington Administrative Code (WAC) 173-303-070 for designation guidance.</p> <p>RL/WHC Response: The chemicals detonated at the Ash Pit site were not spent or abandoned. The text will be revised to state "the chemicals were determined to be in excess or beyond designated stock life," to be consistent with the description in Chapter 3, pg 3-1.</p>	
5.	<p>1-1, 20 Deficiency. The plan does not present adequate information to determine if the waste has been properly designated. Information regarding the source of the waste (i.e., process derived from) and a distinction</p>	

200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE

June 25, 1993
Page 4 of 37

No.	Comments/Response	<u>Concurrence</u>
	<p>between wastes disposed in commercial form and those which were spent material is necessary to make such a determination.</p> <p>Requirement. See previous comment (4).</p> <p>RL/WHC Response: See comment 4. Waste characterization per WAC 173-303 is summarized in Table T4-1. The waste codes in Table T4-1 also indicate that the chemicals were not spent.</p>	
6.	<p>2-2, 1 Deficiency. The description of the demolition site does not provide adequate detail to allow potential exposure pathways to be evaluated.</p> <p>Requirement. Provide description of depth to water table, soil characteristics, meteorological information, and waste containment, if any, used during the detonation. Because the events do not appear to have been contained, these conditions may have significantly influenced the dispersion of contaminants. Therefore, incorporate these factors into the development of an appropriate sampling and analysis plan.</p> <p>RL/WHC Response: <u>Meteorological Information:</u> Chemical detonations at this site were performed under the following weather conditions:</p> <p>Detonation Date: November, 1984</p> <ul style="list-style-type: none"> • Wind speeds: less than 15 m.p.h.; • Temperature: @45° F; • No rain or snow; • No chance of electrical storms. <p>Detonation Date: June 25, 1986</p> <ul style="list-style-type: none"> • Wind speed: @10 m.p.h.; 	

**200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 5 of 37

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<ul style="list-style-type: none"> • Temperature: 895° F; • Clear skies, no rain; • No chance of electrical storms. <p>The surface soils were dry when the detonations were performed at this site. All chemicals detonated were contained in their original, closed containers until released by explosive forces.</p> <p>Depth from soil surface to groundwater is 250-260 feet.</p> <p>The text will be revised to reflect the proceeding information.</p>	
7.	<p>2-2, 10 Deficiency. The text states that portions of the ash pit were used for other activities. It is not evident from the discussion if these activities impacted the ash pit or not.</p> <p>Requirement. Specify if activities not associated with the demolition events were conducted in or adjacent to the demolition site.</p> <p>RL/WHC Response: The text states that the Ash Pit Demolition site is only 20' by 20' area and is situated within a huge borrow pit (with the dimension of 600 feet by 800 feet). Both the burning and soil removal activities occurred away from the detonation site. There were only two known demolition activities at the demolition pit. Please see page 2-2, line 14-15.</p>	
8.	<p>2-2, 22 Deficiency. It is not clear how the boundary of the demolition site was determined.</p> <p>Requirement. Provide rationale for boundary determination. The boundary of the site may have to be revised if contamination from the unit is detected outside the designated area.</p>	

**200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 6 of 37

No.	Comments/Response	<u>Concurrence</u>
	<p>RL/WHC Response: Please see page 2-2, line 20. At the time the fence was placed at the demolition site, there was still a depression in the soil from the blasting pit. If contamination from the unit is detected outside the designated area, the boundaries will be adjusted accordingly.</p>	
9.	<p>2-2, 27 Note. This section of the closure plan, Security Information, may require revision due to the recent and upcoming security downgrades on the Hanford Site.</p> <p>RL/WHC Response: Accepted. Text will be revised to reflect any new security changes to the Hanford Site.</p>	
10.	<p>3-1, 1 Deficiency. A major deficiency of the plan was information on the actual demolition event. The process information chapter does not provide a description of the event or associated actions. For example, was any post-treatment analysis conducted to verify treatment, or physical interaction with the site such as racking, shoveling, or watering down? Was waste containerized or free in pit during detonation? How were waste containers managed during and after the event? What color, how high, how wide was the explosion? Was material seen or heard hitting the ground?</p> <p>Requirement. Provide a detailed narrative of the event and associated actions. The following questions need to be addressed:</p> <ol style="list-style-type: none"> Was the waste poured directly on the ground, allowing wastes to be forced into the ground by the explosion? How were the waste containers managed during and after the event? What were the environmental conditions at the time? How, or was, waste inventory verified? 	

200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE

June 25, 1993
Page 7 of 37

No.	Comments/Response	<u>Concurrence</u>
RL/WHC Response:		
a. No container contents were poured onto the ground prior to detonation. The chemicals were detonated in their containers because opening the cap of the container could have initiated an explosion.		
b. Prior to detonation, the containers were placed in a small pit, wrapped in detonating cord (on a separated blasting cap), surrounded with a blasting agent. The charges were configured in a manner that channeled the explosive force downward.		
There was no evidence of remaining explosives, chemicals, or containers after the detonations, with the exception of the sides of one metal container from the 1986 detonation. The partial container was completely empty and burned. The remains of the container was disposed of in a sanitary landfill.		
c. Refer to RL/WHC response to NOD #6.		
d. A checklist of the chemical inventory was prepared prior to beginning detonation activities. The potentially explosive chemicals were checked off the list as they were placed into a portable bomb containment vessel for transportation to the demolition site. Information from the checklist was used to prepare the Dangerous Waste Annual Report.		
The text will be revised accordingly in order to reflect the proceeding information.		
11. 3-1, 8	Deficiency. This section of the plan describes the wastes as "excess or beyond designated stock life." Page 1-1, line 11 states that "this event was a form of thermal treatment for <u>spent</u> or <u>abandoned</u> chemical	

**200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 8 of 37

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>waste."</p> <p>Requirement. Specify the source or process which generated the waste and the form (product versus spent/used material) in which it was disposed. Consult the Dangerous Waste Regulations, Washington Administrative Code (WAC) 173-303-070 for designation guidance.</p> <p>RL/WHC Response: See comment #4.</p>	
12.	<p>3-1, 25 Deficiency. The text states that chemicals were placed at the bottom of the pit with detonation devices placed around and on top of the chemicals. There is no discussion of how, or if, the waste was containerized.</p> <p>Requirement. Provide a detailed description of the number, composition, volume, and management practices of the containers associated with the wastes detonated at the site. Were the containers, or pieces of containers, removed from the site? If so, how were they managed? State exactly how the wastes were placed in the pit (i.e., poured out of containers).</p> <p>Note. Placement of the detonation devices on top of the waste is of concern because it may have forced the waste into the soil due to the force of the explosion.</p> <p>RL/WHC Response: See comment response #10. In response to the note, the shape of the charge was configured in a manner which initially directed the explosive force downward, but due to the confines of the earthen pit, the force reversed to an upward direction (the path of least resistance). Confining the heat and pressure of the explosive force around the chemicals increased the efficiency of destruction.</p>	

200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLEJune 25, 1993
Page 9 of 37

No.	Comments/Response	Concurrence
13.	<p>3-1, 27 Deficiency. Detonation materials are not included in the scope of sampling and analysis. These materials are now dangerous waste, because they were both derived from the treatment of dangerous waste and now are potentially mixed with dangerous wastes.</p> <p>Requirement. The explosives used to initiate the detonation (and any regulated products potentially generated from the detonation) must be incorporated into the sampling and analysis plan.</p> <p>RL/WHC Response: The chemicals used to initiate the detonation will be listed in a separate table in Chapter 4. The sampling plan will be modified to reflect the additional analytes.</p>	
14.	<p>3-1, 29 Comment. The text states that inspections were conducted following the detonation event.</p> <p>Requirement. Provide detailed description of the focus of inspection, environmental conditions, size, and intensity of the explosion, and any "unofficial" inspection reports or records.</p> <p>RL/WHC Response: After each detonation, the site was inspected to ensure that no explosives, chemicals, or containers remained after the shot. After the 1986 detonation, the soils in and surrounding the pit were surveyed with a organic photoionizer (with an 11.2 ev probe) to determine if there were any residual volatile organics. There were no reading above background.</p> <p>Because the 1984 detonation was at night, the area was searched with spotlights and flashlights after the detonation. The area was reinspected the following morning after daylight. No containers were found.</p>	

**200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 10 of 37

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	The size of the detonations were not recorded and therefore the description would be nebulous.	
15.	<p>4-1 Deficiency. This chapter provides some valuable information, but overall it is inadequate.</p> <p>Suggestion. Incorporate a column specifying the waste source (i.e., spent or in commercial form), the physical state, and action levels.</p> <p>RL/WHC Response: Health-based cleanup thresholds will be provided in the next revision of this closure plan, for those constitutes for which appropriate toxicity information is available.</p>	
16.	<p>T4-1 Deficiency. Several blanks exist on the second and third page of the table. This is inappropriate. The missing components of the table and the statement that "the known inventory of chemicals that were detonated is listed in Table 4-1" (4-1, 12) raises concerns regarding the accuracy of the information presented.</p> <p>Requirement. Provide the missing information.</p> <p>RL/WHC Response: The blank spaces indicate that the chemicals are part of a mixture and the total amount of those mixtures are shown at the beginning of each mixture listing. The table will be revised to clearly indicate chemical mixtures.</p>	
17.	<p>T4-1 Deficiency. It is not apparent how the dangerous waste codes presented in Table T4-1 were determined, or if they are correct. The sources of information are not appropriate for the purpose of designating waste.</p> <p>Requirement. Correct deficiencies and discrepancies of text.</p>	

**200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 11 of 37

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
18.	<p>T4-1 RL/WHC Response: The chemicals were treated in their original containers and assumed to be either outdated or not needed. These chemicals were designated according to WAC 173-303. Any assumptions concerning waste sources were conservative (i.e., in instances where the applicability of a code was uncertain, it was assumed to be applicable). Waste characteristics were derived from known physical properties and toxicity information available for the waste constituents.</p> <p>Deficiency. The detonation material is potentially regulated dangerous waste. However, the material and its products are not designated.</p> <p>Requirement. Correct deficiencies and discrepancies of text. Designate the material.</p> <p>RL/WHC Response: See comment response #13.</p>	
19.	<p>T4-1 Deficiency. An asterisk is present on the "D" symbol in the key list following Table 4-1, typically indicating a reference to a clarifying statement, but no footnote or explanation is provided.</p> <p>Requirement. Correct deficiencies and discrepancies of text.</p> <p>RL/WHC Response: Asterisk will be removed from Table 4-1.</p>	
20.	<p>5-1 Deficiency. The text states that the Tri-Party Agreement (TPA) authorizes ground water to be remediated under CERCLA without intermittent RCRA monitoring. This is not correct. RCRA monitoring is required, but it may be coordinated with CERCLA monitoring.</p> <p>Requirement. Modify the text accordingly.</p> <p>RL/WHC Response: The text will be revised as follows: "The Ash Pit</p>	

**200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 12 of 37

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>Demolition site is not subject to the groundwater monitoring requirements of WAC 173-303-610 (7)(a) if there is not waste left in place, as is consistent with the preferred closure strategy (Chapter 6.0) The Ash Pit Demolition site will not be operated, and has not been operated as a dangerous waste surface impoundment, waste pile, land treatment unit, or landfill as defined in WAC 173-303-645(1)(a). Therefore, if clean or protective closure can be attained, groundwater monitoring is not required."</p>	
21.	<p>6-1, 17 Requirement. Action levels must be approved by Ecology.</p> <p>Suggestion. A table should be generated which integrates this information in Table 4-1.</p> <p>RL/WHC Response: Action levels will be prepared for inclusion in the next revision of this closure plan. Proposed action levels will be health based cleanup thresholds.</p>	
22.	<p>6-1, 19 Deficiency. Table 7-1, referenced here, is said to take into account waste inventory, reaction products, and chemical degradation. The following sentence states that only analytes listed in Table 7-1 are traceable to the demolition site. Table 7-1 does not account for all wastes detonated at the site or potentially regulated reaction or degradation products.</p> <p>Requirement. The closure plan must account for all dangerous wastes associated with the detonation site. This includes dangerous wastes generated from the treatment of the original wastes and materials used to treat the waste (i.e., the detonation materials).</p> <p>RL/WHC Response: Text on Page 6-1, Lines 19-23 will be modified to read as follows: "The basis for determining chemical ownership is the list</p>	

**200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 13 of 37

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>of analytes of interest found in Chapter 7.0, Table 7-1, <u>as qualified by the discussion in Section 7.2.2. Only those analytes identified in Section 7.2.2 and/or Table 7-1</u> are traceable to the Ash Pit Demolition Site activities."</p> <p>Table 7-1, as qualified by the discussion in Section 7.2.2, accounts for all dangerous wastes associated with the detonation site. Regarding the detonation materials, refer to NOD # 18 comment response.</p>	
23.	<p>6-1, 23 Note. The plan states, "if at any time an imminent hazard is posed at the Ash Pit Demolition Site, an expedited response will result to ensure worker safety."</p> <p>Requirement. Closure of the site must be conducted in a manner consistent with the closure plan. Deviation from the closure plan must be approved by Ecology.</p> <p>RL/WHC Response: The word "expedited" will be replaced with the word "emergency" in order to clarify the sentence.</p>	
24.	<p>6-1, 31 Deficiency. The plan states that background will be site-wide background threshold values as defined in the Hanford Site Soil Background (DOE/RL 1992a).</p> <p>Requirement. Ecology must review and approve the Hanford Site Soil Background study (DOE/RL 1992a) before the values can be implemented for closure.</p> <p>RL/WHC Response: Ecology has reviewed and approved <u>the Hanford Site Soil Background Study</u> (DOE/RL 1992a).</p>	
25.	<p>6-1, 34 Deficiency. The plan states that if concentrations exceed initial</p>	

**200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 14 of 37

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>action levels, health-based action levels will be assessed. This is not consistent with clean closure standards. It is expected that during the next revision of the Dangerous Waste Regulations, WAC 173-303, that the Model Toxics Control Act (MTCA) will be incorporated into the closure requirements. To date no guidance or policy has been issued allowing this approach to be implemented.</p> <p>Requirement. If the concentration of waste are below (or reduced to) background levels for listed or characteristic wastes or to the designation limit for state-only waste managed at the site clean closure will be achieved. If the site is closed with waste left in place post-closure requirements will be imposed.</p> <p>RL/WHC Response: In anticipating the incorporation of cleanup levels rather than environmental background levels, into the Washington State Department Waste regulations, RL contends it is appropriate to use health-based action levels.</p>	
26.	<p>6-1, 37 Deficiency. This paragraph discusses the proposed method to determine cleanup levels. It is said that the health-based levels will be based on equations and exposure assumptions presented in the Hanford Site Baseline Risk Assessment Methodology (DOE/RL 1992B). This is not appropriate.</p> <p>Requirement. Health-based levels are determined from the Model Toxic Control Act (MTCA). See two previous comments.</p> <p>RL/WHC Response: RL has attempted to establish a uniform health-based cleanup standard for a range of land-use eventualities (Hanford Site Baseline Risk Assessment Methodology [HSBRAM]; referenced in the closure plan). Preparation of this standard is sanctioned by the Tri-Party Agreement process (Milestone number M-29-03). It is intended to provide</p>	

200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE

June 25, 1993
Page 15 of 37

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>a risk assessment methodology that is consistent with current regulations and guidance. The method was developed specifically to evaluated risk for CERCLA remedial investigations and RCRA facility investigations. The health-based method of HSBRAM is similar to, and consistent with the Model Toxics Control Act (MTCA [WAC 173-340]). HSBRAM has been accepted by the EPA and Ecology generally at the Hanford Site, and is consistent with the consensus of TPA project manager meetings and Ecology's standards will replace background in WAC 173-303. HSBRAM is proposed in the Ash Pit Demolition closure plan.</p>	
27.	<p>6-1, 47 Deficiency. The plan states that health-based levels will be based on values that are current at the time of approval of this closure plan.</p> <p>Requirement. Ecology must approve all health-based levels implemented for closure.</p> <p>RL/WHC Response: Please see page 6-1, line 44-47. The term "values" in this sentence is referring to the oral reference dose and slope factors obtained for the Integrated Risk Information System (IRIS) (EPA 1991) database, these values may change as IRIS is updated.</p>	
28.	<p>6-1, 50 Deficiency. This paragraph discusses remedial activities and coordination with CERCLA remediation if it is determined that the action levels are exceeded.</p> <p>Requirement. CERCLA coordination is acceptable if the time frame and other factors can be integrated with the RCRA closure. But closure of the unit will not be deferred to, or preempted by, the CERCLA remediation. If clean closure is not achieved, post-closure requirements will be imposed, including requirements to assure residual contamination will be addressed during CERCLA remediation.</p>	

**200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 16 of 37

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	RL/WHC Response: Coordination is planned if clean closure is not achieved. RL would keep Ecology informed on this integration process whenever it occurred. Please clarify the statement that closure cannot be deferred until CERCLA remediation.	
29.	6-2, 10 Requirement. Simply cite the regulations or incorporate the entire section.	
	RL/WHC Response: Reference has been changed to WAC 173-303-610 (2)(a).	
30.	6-2, 36 Deficiency. The plan states that the following actions will be/or have been taken. It is not clear which actions were conducted prior to preparation and approval of the closure plan.	
	Requirement. Actions conducted prior to submittal of the closure plan must be distinguished in order to evaluate the adequacy.	
	RL/WHC Response: Any action that has been already completed will be noted in the text.	
31.	6-2, 43 Deficiency. This bullet states that the Hanford Site Baseline Risk Assessment Methodology implements WAC 173-304 (MTCA).	
	Requirement. See comment 24.	
	RL/WHC Response: See comment responses # 24 and # 26.	
32.	6-3, 20 Deficiency. The plan states that the samples will be analyzed in an on-site mobile laboratory capable of performing to EPA Analytical level III standards.	
	Requirement. See comment 2.	

**200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 17 of 37

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	RL/WHC Response: See comment response #2.	
33.	<p>6-3, 29 Deficiency. Table 7-1, referenced here, provides a list of target analytes that is inadequate because it does not address by-product and degradation products.</p> <p>Requirement. Modify text accordingly. See comment 22.</p> <p>RL/WHC Response: See comment response #22.</p>	
34.	<p>6-3, 34 Deficiency. This section of the plan addressed contamination at the demolition site above the action levels only in the near-surface soils. It is not appropriate to address only near-surface contamination.</p> <p>Requirement. Removal of deeper residual contamination may be coordinated with CERCLA remediation but investigation and planning can not be deferred. If such an approach were implemented a plan would have to be developed to assure that RCRA closure standards would be met by the final remediation.</p> <p>Note. Action levels described here are not consistent with other areas of the text. Health-based levels should not be used to define action levels at this point.</p> <p>RL/WHC Response: See comment response #48.</p>	
35.	<p>7-1, 28 Deficiency. The plan specifies that samples will be analyzed by an on-site mobile laboratory capable of performing to EPA analytical level III standards.</p> <p>Requirement. Explain analytical level III services as it applies to this closure. Specify if the mobile laboratory meets level III</p>	

**200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 18 of 37

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>requirements. See comment 2.</p> <p>RL/WHC Response: See comment response #2.</p>	
36.	<p>7-1, 32 Deficiency. The text states that portable field-screening instruments will provide adequate information for devising and implementing appropriate remedial actions.</p> <p>Requirement. Specify if more elaborate sampling and analysis will be conducted if constituents are found at significant concentrations.</p> <p>RL/WHC Response: Text is misquoted. Text reads "... the data obtained from soil sampling and analysis (possibly supplemented by data obtained with portable field screening instrumentation) will provide adequate information for devising and implementing appropriate remedial action."</p> <p>Confirmatory sampling (i.e., more elaborate sampling) is proposed to support a regulatory determination of clean closure. There is no technical need or justification for conducting "more elaborate sampling and analysis" to support a remedial action.</p>	
37.	<p>7-2, 27 Deficiency. This paragraph discusses the possibility for the generation of by-products from the detonation event.</p> <p>Requirement. Incorporate regulated products into the analyte list.</p> <p>RL/WHC Response: See comment response #22.</p>	
38.	<p>7-2, 34 Deficiency. This paragraph discusses the potential dispersion of waste from the detonation event. This factor will influence the determination of the boundary.</p>	

200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE

June 25, 1993
Page 19 of 37

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>Requirement. Modify text to reflect this consideration.</p> <p>RL/WHC Response: See comment response #48.</p>	
39.	<p>7-2, 47 Deficiency. This section refers to the waste inventory list. The waste inventory list is inadequate.</p> <p>Requirement. It must account for all dangerous wastes detonated or generated from the detonation at the site.</p> <p>RL/WHC Response: See comment response #18.</p>	
40.	<p>7-3, 5 Requirement. See comments 38 and 39.</p> <p>RL/WHC Response: See comment responses #22 and #48.</p>	
41.	<p>7-3, 11 Note. It is stated that the concentrations of any dangerous waste constituents that may remain in the soil after closure would probably exist at very low concentrations.</p> <p>Requirement. Specify whether the mobile laboratory will, or will not, be able to detect such concentrations.</p> <p>RL/WHC Response: Taken out of context; terms such as "low" or "very low" do not have quantitative significance. The intent of the cited statement in context, as indicated in the sentence that follows in the text, is to justify a conservative approach to initial sampling and analysis (as opposed to, for example, doing level I field screening initially). Method detection limits are identified on Pages 7-8 and 7-9.</p>	
42.	<p>7-3, 15 Requirement. See comment 38 and 39.</p>	

200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE

June 25, 1993
Page 20 of 37

No.	Comments/Response	<u>Concurrence</u>
	RL/WHC Response: See comment responses #22 and #48.	
43.	7-3, 18 Deficiency. Portable field screening instruments are considered level I, not level I or II.	
	Requirement. Modify the text to reflect this consideration.	
	RL/WHC Response: Accepted. See comment response #2.	
44.	7-3, 43 Deficiency. It is not clear why Methyl Ethyl Ketone was the only compound selected from the Toxic Characteristics List.	
	Requirement. Provide a thorough discussion of this determination.	
	RL/WHC Response: Text should read "... two target compound list (TCL) compounds: benzene and toluene." Benzene and toluene are the only TCL compounds among the analytes of interest listed in Table 7-1. MEK was inserted in the text in place of benzene and toluene as the consequence of an editing error.	
45.	7-4, 1 Deficiency. There is concern for on-site calibration of instruments. Is it conceivable that the instruments may be less sensitive because of local contamination?	
	Requirement. Provide a discussion to demonstrate that this concern has or will be addressed.	
	RL/WHC Response: The citation discusses preparation or acquisition of solutions that would be used as calibration standards (i.e., for equipment such as gas chromatograph, and GC/MS devices). These types of devices are virtually always calibr	

ated

on site, because most of t

are fixed equipment. Calibration will be managed and controlled

4080*1206136
9313021.0804

**200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 21 of 37

No.	Comments/Response	<u>Concurrence</u>
	<p>technical and operating procedures. All proposed EAL analytical procedures, will be submitted to Ecology for review and approval in advance of sampling. These types of devices are virtually always calibrated in place, insofar as they generally are fixed equipment.</p>	
46.	<p>7-4, 28 Deficiency. Table 7-1, cited here, is incomplete. Several metals are present in combined form as indicated by the list provided in chapter 4. Pure metals are not expected to be found at the site.</p> <p>Requirement. Incorporate sampling and analysis for all regulated compounds detonated or generated at the site.</p> <p>RL/WHC Response: Rationale for all modifications and/or deletions to the analytes of interest list are provided on page 7-4, line 38, continuing to page 7-5, line 37.</p>	
47.	<p>7-5, 45 Requirement. The sampling design must be evaluated by a statistician prior to conducting any work to determine if the sampling and analysis are adequate to determine the extent of contamination.</p> <p>In addition to random sampling, add a provision for bias sampling in areas of visual contamination, down wind, and deeper in pit areas.</p> <p>RL/WHC Response: Current commitments call for RL and WHC to sample and analyze the near-surface soils using the EAL for analytical support. The EAL (analytical Level II) generally provides method detection limit capabilities in the low PPM range, which should compare favorably with proposed action limits for the analytes of interest.</p> <p>If the initial round of sampling should indicate that any of the analytes of interest in Table 7-1 are present at concentrations exceeding proposed action levels, then supplemental sampling will be</p>	

200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLEJune 25, 1993
Page 22 of 37

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
------------	--------------------------	--------------------

undertaken. A new sampling arrangement would be developed for supplemental sampling, working outward from the "hot spot" locations identified previously. The supplemental sampling plan would be reviewed in advance with Ecology. Field screening methods may be applied for supplementary sampling. If RL and WHC should propose field screening methods (analytical Level I) supplemental sampling, demonstrations would be provided that the screening method(s) of choice offer adequate sensitivity to detect the analyte(s) of interest at concentrations that are statistically significantly lower than corresponding action level(s). If it is determined that field screening methods are not applicable, sampling and analysis would be carried out by the same methods proposed for initial sampling (i.e., analytical level II).

Supplemental sampling of the near-surface soils (i.e., the uppermost 2 ft interval) would be extended outward from "hot spots" until the extent of contaminated soil is completely defined, irrespective of the initial sampling arrangement. The volume of contaminated soil (i.e., soil with contaminant concentrations exceeding negotiated action levels) would be removed in 2-ft thick layer, as discussed in Section 7.3. Afterwards, the newly exposed ground surface would be resampled for verification purposes (analytical Level III). The verification sampling plan would be reviewed in advance with Ecology. If the newly exposed soil also is contaminated, the lateral extent of contamination would be determined by sampling as above, and additional soil would be removed in 2-ft lifts as necessary. This process of sampling and soil removal would be repeated as often as necessary to achieve the objective of clean closure. A final round of confirmatory sampling (analytical Level III) is proposed to support a regulatory determination of clean closure. As in other cases, the confirmatory sampling plan would be reviewed in advance with Ecology.

RL and WHC believe that contamination at the demolition sites (if

200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE

June 25, 1993
Page 23 of 37

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>present) is shallow and of limited lateral extent. The proposed plan seeks to limit the amount of sampling and associated expense in the event that this view is correct. RL and WHC are aware that the approach involves some risk-taking and cost consequences in the event that contamination is extensive and a relatively elaborate cleanup effort is required. The closure plan includes contingencies (outlined above) for working outward and downward in the soil column if contamination is discovered. RL and WHC believe that plan offers sufficient contingencies to ensure that the plan will be responsive to Ecology's regulatory interests in any event regarding the specific nature and extent of contamination at the site.</p> <p>Regarding <u>statistical evaluation of the plan</u>: The draft plan was reviewed by a qualified statistician.</p> <p>Regarding <u>areas of visual contamination</u>: There are no visibly contaminated areas. As discussed in Section 3.0, the sites were inspected immediately after demolition events, and any visibly contaminated areas were cleaned up.</p> <p>Regarding <u>biased sampling in the down-wind direction</u>: Work rules in place at the time prohibited conducting demolition activities when wind speeds exceeded 35 mph (i.e., it is generally know that none of the demolition events occurred at the times when winds exceeded 35 mph). Participants at the demolition events believe that wind condition never actually exceeded 10-15 mph, although written records of weather conditions were not kept. RL and WHC believes that contingencies in the existing plan are sufficient to identify distortions in contaminant distribution due to wind dispersal without modifications to the proposed arrangement for initial sampling.</p> <p>Regarding Ecology's expressed interest in extending <u>sampling deeper in</u></p>	

200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE

June 25, 1993
Page 24 of 37

No.	Comments/Response	Concurrence
	<p><u>pit areas:</u> It is unlikely that contaminants were driven into the ground by the demolition activities. It is far likelier that chemical reaction products and any unreacted residues were released into the air (the unconfined direction in terms of the forces and pressure involved). Because contamination (if any) would have been a surface condition initially, the existence of sub-surface contamination (if any) would have been brought about by factors such as solution and leaching. RL and WHC believes that contingencies in the existing plan are sufficient to identify residual sub-surface contamination. If the uppermost 2 ft of the soil column is shown not to contain contaminant concentrations at or near to action levels, then RL and WHC does not agree there is a legitimate concern that higher concentration of contaminants traceable to the subject activities could exist at greater depths. It is not a reasonable expectation that contaminants could somehow be driven 12 ft into the ground as the result of the activities described in the closure plan.</p> <p>Extensive research has been conducted at the Hanford Site regarding moisture evapotranspiration of soil moisture and infiltration (recharge) through the vadose zone. It has generally been determined, with some exceptions for isolated locations where the near-surface soils are extremely coarse, that wetting fronts generally do not penetrate to depths exceeding about 4 feet. Sampling to a depth of 12 feet would require working with either a hollow-stem auger rig or a backhoe. Either option represents a major departure (in terms of time and cost) from the proposed plan. To attempt to resolve this issue, RL and WHC would propose to sample to a depth of 4 feet at the open circled locations shown in Figures 7-1 in the plan. RL and WHC also would be willing to offer to resample at extended depths at any location where initial sampling results indicate that contaminants are present at or close to proposed action levels.</p>	

**200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 25 of 37

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
48.	<p>7-6, 1 Deficiency. Due to the heterogenous nature of the waste detonated at the site, and the fact that materials may have been driven to considerable depths from the explosion, contaminants are not likely to be evenly distributed. One surface sample from the approximate center of the pit is not adequate.</p> <p>Requirement. Sampling will have to be conducted not only at the surface but also at substantial depth under the site. See previous comment.</p> <p>RL/WHC Response: See comment response #48.</p>	
49.	<p>7-6, 11 Deficiency. It is stated that surface sampling will be conducted at two locations. This is inadequate.</p> <p>Requirement. At each sampling location, sampling and analysis for organics should be conducted at a minimum for both the top layer and the next underlying layer.</p> <p>RL/WHC Response: As indicated in Lines 36-39 of the same page, the purpose of the two surface samples is to evaluate the adequacy of the proposed arrangement. If residual contaminants are not identifiable in the two surface (0-6 in.) samples to be taken as identified on line 11, then RL and WHC do not propose to sample and analyze this interval at the other locations. The two locations were selected to be near the geometric center of the site where the highest concentrations of residual contamination (if any) would be expected to be occur.</p>	
50.	<p>7-6, 26 Deficiency. The text states that the soil sampling will occur to a depth of eighteen inches below grade at six inch intervals. This is not adequate.</p> <p>Requirement. At each sampling location, sampling and analysis for</p>	

**200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 26 of 37

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>organics should be conducted for both the top layer and the next underlying layer and the depth of analysis must be substantially deeper. Provide explanation of how soil removed prior to sampling will be managed.</p> <p>RL/WHC Response: The text does not indicate that samples will be taken at 6-in. intervals. Text specifies that one sample will be taken from the 6-18 in. interval. Sampling will be carried out in conformance with EII 5.2 (as indicated on line 24). All previous RCRA sampling at Hanford has been performed per this procedure since the procedure was promulgated in 1989. Ecology has regularly approved plans that specify sampling per this procedure. There are no provisions in EII 5.2 for management of soil that is removed prior to sampling. The soil would not be removed beyond the immediate vicinity of the sample location.</p>	
51.	<p>7-7, 6 Deficiency. Quantitation limits implemented as action levels must be justified.</p> <p>Suggestion. Modify Table 4-1 to incorporate columns specifying the action levels associated with potential contaminants and the basis for such levels. For example, are specific action levels established from background measurements, detection limits, etc.</p> <p>RL/WHC Response: The citation does not state that quantitation limits would be implemented as action levels. RL and WHC do not propose quantitation limits as action levels in any case. Regarding action levels, refer to NOD # 21 comment response.</p>	
52.	<p>7-7, 10 Deficiency. Action levels must be determined prior to sampling. The text should mention when action levels will be proposed and contaminant levels will be compared against proposed action levels. More information is needed on the site background threshold values. At</p>	

**200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 27 of 37

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>present, the Hanford Soil Background Study is going on, and Ecology has yet to receive and review the finalized values for various organics and inorganics of concern.</p> <p>Requirement. Revise text accordingly. See comment 24.</p> <p>RL/WHC Response: Regarding action levels, refer to NOD # 21 comment response. Regarding the Hanford Site-wide soil background study, refer to NOD # 24 comment response.</p>	
53.	<p>7-7, 17 Deficiency. Preparatory procedures lack detail and sample preparation is neglected.</p> <p>Requirement. Revise text accordingly.</p> <p>RL/WHC Response: All proposed EAL analytical methods, including information on sample preparation, will be submitted to Ecology for review and approval in advance of sampling. The requested information is not available at this time.</p>	
54.	<p>7-7, 19 Deficiency. Initial characterization analysis must be performed by EPA level III criteria (SW-846) which can only be performed by an EPA certified stationary laboratory. The mobile lab provides only level II analyses. Therefore, the mobile lab should only be used to aid in determining sampling locations and plume mapping during remediation.</p> <p>Requirement. Modify text accordingly.</p> <p>RL/WHC Response: Accepted. See comment response #2.</p>	
55.	<p>7-7, 41 Deficiency. Supercritical fluid extraction (SFE) is not appropriate due to the fact that it has yet to receive EPA approval.</p>	

**200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 28 of 37

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>Requirement. Revise the text to reflect the use of approved methods of sampling and analysis.</p> <p>RL/WHC Response: Ecology's concern is noted. All proposed EAL analytical methods, including SFE, will be submitted to Ecology for review and approval in advance of sampling.</p>	
56.	<p>7-7, 44 Deficiency. X-ray fluorescence is not an approved method for metals characterization. It is only to be used as an in-field method to determine sampling locations or areas of contamination.</p> <p>Requirement. Revise the text to reflect the use of approved methods of sampling and analysis.</p> <p>RL/WHC Response: Ecology's concern is noted. All proposed EAL analytical methods, including XRF, will be submitted to Ecology for review and approval in advance of sampling. Additionally, the text of Revision 1 will describe the EAL as an analytical level II laboratory (see NOD #2 comment response), and will propose XRF as an analytical level II application.</p>	
57.	<p>7-7, 49 Deficiency. The discussion of the configuration of the analytical series does not address potential impacts on analytical results from variations in the configuration (i.e., burn off organics before analyzing for them)</p> <p>Requirements. Address the influence of the configuration of the series on the analytical results.</p> <p>RL/WHC Response: Accepted. "...in series." should read "...in parallel."</p>	

**200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 29 of 37

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
58.	<p>7-8, 4 Deficiency. Procedures for calibration of analytical equipment is said to be based on mobile lab and published EPA procedures. The concern is that combining the procedures could allow for manipulation of performance or not be consistent with EPA requirements.</p> <p>Requirement. Provide supporting evidence that these procedures will be consistent with EPA requirements.</p> <p>RL/WHC Response: Ecology's concern is noted. All proposed EAL analytical methods will be submitted to Ecology for review and approval in advance of sampling.</p>	
59.	<p>7-8, 31 Deficiency. Utilizing unapproved methods may lead to unacceptable data.</p> <p>Requirement. Do not rely solely on this procedure.</p> <p>RL/WHC Response: Ecology's concern is noted. All proposed EAL analytical methods, including SFE, will be submitted to Ecology for review and approval in advance of sampling.</p>	
60.	<p>7-8, 34 Requirement. See comment 57.</p> <p>RL/WHC Response: See comment response #57.</p>	
61.	<p>7-8, 44 Deficiency. Detection limits for target RCRA metals are said to 20 micrograms per gram. Do these detection limits meet the Dangerous Waste requirements of background levels for characteristic and listed wastes and designation limits for state only wastes?</p> <p>Requirement. Compare the detection limits with the WAC 173-303 regulatory levels.</p>	

200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE

June 25, 1993
Page 30 of 37

No.	Comments/Response	Concurrence
	<p>RL/WHC Response: The one metal analyte of interest identified in Table 7-1 is chromium. The Hanford Site-wide background value (i.e., the 95/95 threshold value) for total chromium is 28 mg/kg (determined by ICP, per CLP specification). The maximum measured value was 320 mg/kg (Hoover et al. 1993). No site-wide background data have been determined for total chromium by XRF. (Results obtained by the two methods are not directly comparable.) The designation limit concentration for total chromium in soil proposed by Ecology (in letter from Roger Stanley to R. D. Izatt (1-10-92) re. "Soil Cleanup/Remediation Policy for Hanford") was 100 ppm. (DOE/RL 1992a)</p>	
62.	<p>7-8, 51 Requirement. See previous comment.</p> <p>RL/WHC Response: See comment response #62.</p>	
63.	<p>7-9, 8 Deficiency. The on-site mobile laboratory's capabilities are not equivalent to analytical level III. Verification analysis must be performed by EPA level III criteria (SW-846), which can only be performed by an EPA accredited laboratory. The mobile lab provides only level II analyses.</p> <p>Requirement. Unless accredited, the mobile lab should only be used to aid in determining sampling locations and plume mapping during site initial characterization.</p> <p>RL/WHC Response: Accepted. See comment response #2.</p>	
64.	<p>7-10, 1 Requirement. On-site mobile laboratory calibration procedures must be fully compliant with EPA requirements.</p> <p>RL/WHC Response: Accepted. See comment response #2.</p>	

200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE

June 25, 1993
Page 31 of 37

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
65.	<p>7-9, 10 Deficiency. Calibration of instruments only once a day, or shift, may introduce significant error. Calibration may be effected by varying environmental conditions throughout the day, such as a change in temperature or humidity.</p> <p>Requirement. Calibration schedules must respond to fluctuations in ambient environmental conditions.</p> <p>RL/WHC Response: The specific nature of this concern is unclear. The citation on page 7-9, line 10 does not address the subject of calibration. The reviewer's intent may have been to cite page 7-10, line 12. The intent of RL and WHC on the issue of calibration is to conform to the statements appearing on page 7-10, lines 1-6, and Section 7A-6 of the QAPjP. The sentence on page 7-10, lines 12-14 will be eliminated from Revision 1 to avoid any potential conflict or the appearance of conflict between these statements.</p>	
66.	<p>7-11, 35 Requirement. All clean closure sample data should be compiled and submitted in Contract Laboratory Procedure (CLP) format. Consult SW-846, Chapter 1, for guidance on the forms which are appropriate.</p> <p>RL/WHC Response: The text already cites SW-846, Chapter 1 for guidance on documentation (see lines 45-46). CLP format is not a requirement of WAC 173-303.</p>	
67.	<p>7-12, 34 Deficiency. WAC 173-303-610 is not included in the citations consulted for the development of soil cleanup action levels.</p> <p>Requirement. To be considered clean closure, soil contamination must be less than or equal to background or designation limit for state only wastes. If soil contamination concentrations are greater than those just stated, they would be considered a modified landfill closure. This</p>	

**200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 32 of 37

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	<p>would require compliance with reduced landfill requirements. Also see comment 25.</p> <p>RL/WHC Response: See comment response #25 and #26.</p>	
68.	<p>7-13, 12 Deficiency. The determination of sampling locations by using random algorithm for initial characterization as specified in section 7.2.3 is acceptable. But the location of sampling points for calculation of the volume of contaminated soil demands a systematic protocol. Sampling plans with well defined grid spacing, locations, etc., might vary depending on the results obtained in the initial characterization.</p> <p>Requirement. The sampling plan will require approval prior to implementation.</p> <p>RL/WHC Response: Accepted.</p>	
69.	<p>7-13, 29 Deficiency. The proposed two feet vertical depth for sampling is inadequate.</p> <p>Requirement. Significantly increase the proposed sampling depth. Consider twelve foot depth.</p> <p>RL/WHC Response: See comment response #48.</p>	
70.	<p>7-14, 12 Note. The application of water during removal to control dust needs careful examination and will depend on the contaminant of concern. There is a good chance that contaminants can migrate with water downward during the process. This is especially so since excavation is limited. Other dust control devices may have to be applied depending on the nature of the contaminants.</p>	

**200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 33 of 37

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	RL/WHC Response: Accepted. (No change to text at this time.)	
71.	<p>7-15, 15 Deficiency. Regulatory requirements require that verification sample analysis be done at level III or IV. A mobile laboratory does not qualify.</p> <p>Requirement. Verification analyses must be done by EPA approved methodology, SW-846, some of which can only be done in a stationary laboratory.</p> <p>RL/WHC Response: Accepted. See comment response #2.</p>	
72.	<p>7-16, 14 Deficiency. A closure plan can be amended prior to final closure but only with approval from the lead regulatory agency which is Ecology in this case. This requirement was ambiguously presented in the closure plan.</p> <p>Requirement. Revise the text.</p> <p>RL/WHC Response: See page 7-16, line 17-20 for clarification.</p>	
73.	<p>F7-1 Requirement. Provide a direction arrow.</p> <p>RL/WHC Response: Accepted.</p>	
74.	<p>F7-1 Requirement. Show the location of the detonation pit.</p> <p>RL/WHC Response: Presently, there is no physically identifiable detonation pit at the site. However, the depression was still evident at the time the fenced boundary was established. Figure F7-1 represents precise coordinates of surveyed monuments that were placed approximately 10 feet out from the present 20 by 20 foot fence boundary. The reason</p>	

**200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 34 of 37

No.	Comments/Response	<u>Concurrence</u>
75.	<p data-bbox="342 581 406 609">F7-1</p> <p data-bbox="487 423 1587 548">the site was surveyed and the monuments located 10 feet outside the fence boundary was to ensure a wide, complete, and surveyed sampling area. The 20 by 20 foot fence site boundary can be approximated and overlained on top of this figure.</p> <p data-bbox="487 581 1555 639">Deficiency. Sampling locations are not biased to include downwind areas.</p> <p data-bbox="487 678 1570 737">Requirement. Sampling must be done to characterize all potentially contaminated areas.</p> <p data-bbox="487 776 1178 802">RL/WHC Response: See comment response #48.</p>	
76.	<p data-bbox="342 834 406 862">F7-1</p> <p data-bbox="487 834 1634 932">Deficiency. Surface sampling in the middle of the site (probably the pit) is not adequate. The contamination of wastes in the center of the site is suspected to be the greatest and deepest.</p> <p data-bbox="487 964 1459 1023">Requirement. Modify the sampling plan and figure to address deficiencies.</p> <p data-bbox="487 1094 1178 1120">RL/WHC Response: See comment response #48.</p>	
77.	<p data-bbox="342 1153 406 1180">T7-1</p> <p data-bbox="487 1153 1102 1180">Deficiency. This table is inadequate.</p> <p data-bbox="487 1219 1587 1310">Requirement. Regulated decomposition and reaction products must be included in the list of target analytes. Appropriate methodologies, action levels, and detection limits need to be listed.</p> <p data-bbox="487 1349 1540 1438">RL/WHC Response: Regarding <u>decomposition and reaction products</u>: Recognized decomposition and reaction products are identified and discussed on Pages 7-4 and 7-5. Recognized products that may be</p>	

**200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 35 of 37

No.	Comments/Response	<u>Concurrence</u>
	<p>constituents of potential regulatory concern are listed in the Table. (Also refer to NOD # 22 comment response.)</p> <p>Regarding <u>methodologies</u>: Methodologies for initial sampling and analysis in the EAL are identified in the table to the extent that RL/WHC is able to do so at this time (in advance of issuance of EAL procedure manuals). Formal EAL analytical procedures are in preparation. Copies of all EAL analytical procedures will be submitted to Ecology for review and approval in advance of sampling. Anticipated relationships between EAL procedures and published EPA methods (and other methods) are discussed in Section 7.2.4.</p> <p>Regarding <u>action levels</u>: A table listing proposed action levels for the analytes of interest identified in Table 7-1 will be prepared for inclusion in Section 6.0 of Revision 1.</p> <p>Regarding <u>detection limits</u>: Practical quantitation limits (PQLs) are listed in Table 7A-1 of the QAPJP. The same analytes are listed in Tables 7-1 and 7A-1. An explanatory note will be attached to Table 7-1 indicating where the PQL information is provided.</p>	
78.	<p>8-2, 15 Deficiency. This is not an adequate explanation of potential integration of RCRA with CERCLA.</p> <p>Requirement. If such an approach is to be considered, a much more elaborate discussion must be provided. Yearly inspection of the site until CERCLA remediation is not adequate. Methods to integrate sampling and analysis requirements, minimize the migration of wastes, and security of the site until remediation would have to be developed.</p> <p>RL/WHC Response: Yearly inspection is a minimal base line. Actual</p>	

**200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 36 of 37

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	inspection intervals will not be determined until after sample results are received and evaluated. If it is determined that post-closure documentation is necessary than a detailed and specific plan will be developed.	
79.	Appendix Comment. A general comment about the Appendix is that it is inadequate.	
	<p>Suggestion. Provide information about process knowledge, spill/occurrence reports, and the detonation event (i.e., a description of the actual event and environmental conditions).</p> <p>RL/WHC Response: The requested information has not been provided in any previous QAPJP prepared by RL and WHC. Process knowledge information has already been provided in Chapter 3 of the closure plan. There were no spill/occurrence to report and the detonation event is described in other locations in the closure plan.</p>	
80.	7A-1, 25 Deficiency. The objective of the investigation is to determine the extent of contamination at the site. Surface sampling is specified as the objective of the investigation. This is not correct.	
	<p>Requirement. Revise the text accordingly.</p> <p>RL/WHC Response: Accepted. Lines 25-27 will be revised to read: "The principal objective of initial (investigative) sampling will be to identify the presence and extent of dangerous waste constituents in surface soils at the site relative to levels of potential regulatory concern."</p>	
81.	7A-1, 43 Requirement. If remediation is required, confirmatory samples are required and must be done in an EPA approved laboratory at level III	

**200 WEST ASH PIT DEMOLITION SITE CLOSURE PLAN REVISION 0
NOTICE OF DEFICIENCY RESPONSE TABLE**

June 25, 1993
Page 37 of 37

<u>No.</u>	<u>Comments/Response</u>	<u>Concurrence</u>
	analysis.	
	RL/WHC Response: Accepted. See comment response #2.	
82.	7A-2, 4 Suggestion. EPA-QZMS-005/80, "Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans," should also be referenced.	
	RL/WHC Response: Accepted.	
83.	7A-10,17 Deficiency. The reference provided for validation procedures, "Data Validation Procedures for Chemical Analysis (WHC-SD-EN-SPP-002)," is a validation procedure for Contract Laboratory Program (CLP) sample data, not analyses performed under SW-846. The correct reference should be: Sample Management and Administration (WHC-CM-5-3).	
	Requirement. Revise the text accordingly.	
	RL/WHC Response: Accepted.	

CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
J. E. Rasmussen, RL R. E. Lerch, WHC (D. M. Korematsu-Olund, WHC)	G. C. Hofer, EPA D. Butler, Ecology	Incoming 9302984 Xref 9355411D

Subject: SUBMITTAL OF THE 200 WEST AREA ASH PIT DEMOLITION SITE (T-2-2) AND THE 218 E-8 BORROW PIT DEMOLITION SITE (T-2-1) CLOSURE PLANS NOTICE OF DEFICIENCY RESPONSE TABLES

INTERNAL DISTRIBUTION

Approval	Date	Name	Location	w/att
		Correspondence Control	A3-01	
		B. A. Austin	B2-35	
		R. E. Bolls	N3-13	
		H. C. Boynton	N3-11	
		R. A. Carlson	H6-03	
		G. D. Carpenter	H6-30	
		G. W. Jackson, Assignee	H6-21	
		D. M. Korematsu-Olund	H6-23	
		R. J. Landon	H6-22	
		R. E. Lerch	B3-63	
		P. J. Mackey	B3-15	
		H. E. McGuire, Level 1	B3-63	
		R. D. Pierce	N3-13	
		S. M. Price	H6-23	
		R. J. Roberts	N3-13	
		M. R. Romsos	N3-11	
		F. A. Ruck III	H6-23	
		W. A. Skelly	H6-03	
		J. L. Waite	B1-59	
		B. D. Williamson	B3-15	
		EDMC	H6-08	
		RCRA FILES/GHL	H6-23	
		DMKO/LB	H6-23	

9313021-0822